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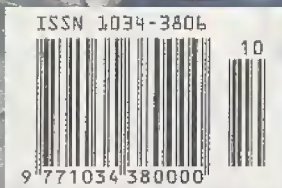
MovieShop

Digital video editing gets better

VR Karting HOT GAME preview

CONNECT your Amiga to a PC

MUSIC X 2.0 reviewed



* Recommended Retail Price

Sneak look at
Twist database



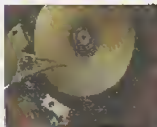
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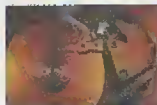
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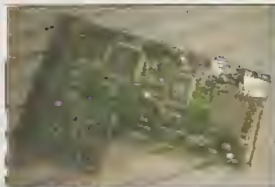
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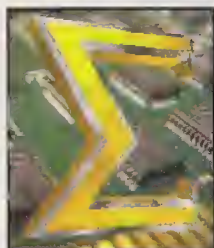
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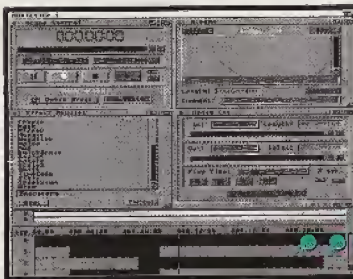
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Software control, audio mixing, chromakey... is it the best genlock yet?

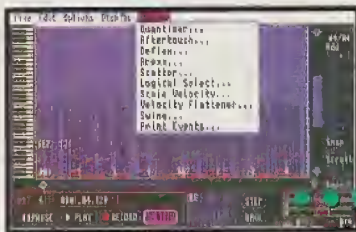
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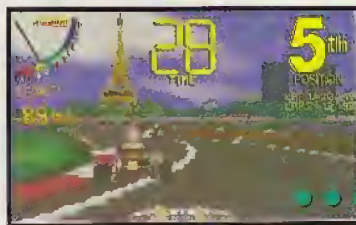
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Machine: A4000/040/40MHz

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Easy Internet access coming

▶ Surfing the World Wide Web may sound like little more than a yet another passing fad to some. Why is it that we all of a sudden need all this information? We seemed to cope without it yesterday.

However, sound reasons to get connected are appearing - reasons that add up to savings in time and money. Advertising, marketing, communication, shopping, research, software library access, entertainment - the list goes on.

Us Amiga owners have battled with software that was not configured for any particular service provider, which makes getting on the Internet a cumbersome experience. Many of our readers made the leap recently and picked up a copy of our Internet disks, which were configured to work with Ausnet. They were better than previous offerings, but still not perfect.

The good news is that easy to install, more robust offerings are in the pipeline. The commercial version 4.1 of the TCP/IP networking software included on the aforementioned disks is now available locally, and updates to the AMosaic browser are also bringing the Amiga up to speed with other computer platforms. A spinoff from these improvements is that local area networking may also move toward TCP/IP - the standard used by the Internet.

We've already had reports of respectable performance from TCP/IP based Amiga networks - over 400k per second and climbing. This is around the same speed as Quicknet, which has

good hardware but lousy software - it can't automatically recover from one machine on the LAN going down.

TCP/IP, on the other hand, has many utilities available for managing the network. As the Internet becomes a more serious business tool, running a TCP/IP network locally will make integrating your system into the World Wide Web a simple task. Becoming an information provider will be easier. Using the Internet will be easier. The other good news is that network cards to run this software on are around \$150 - a lot cheaper than Quicknet.

Next month we'll be checking out TCP/IP software in more detail, however in this issue Daniel Rutter examines an interim solution to getting your Amiga connected to any PCs in the vicinity so you can easily move files around between machines without using the usual sneakernet system. There are several solutions available to do this. We use them here at Amiga Review. In the future we plan a single network to bring all our office machines together - but that's next month.

In other news, the fortunes of a local Amiga distributor are improving by the day - see the full story inside. It now looks like Amigas will be selling in Australia again within weeks. They're to be bundled with an excellent range of software that will make the Amiga 1200 very good value for money once again! □

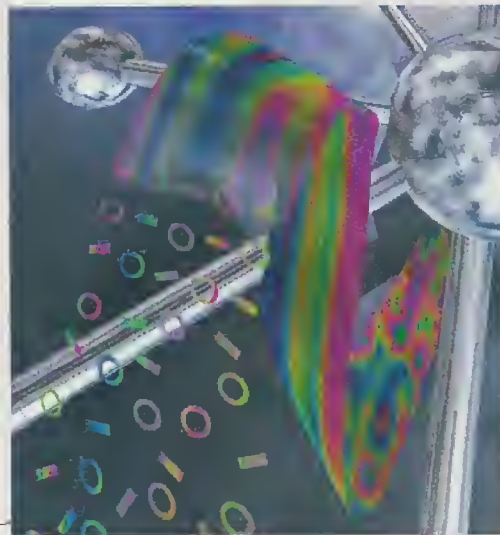
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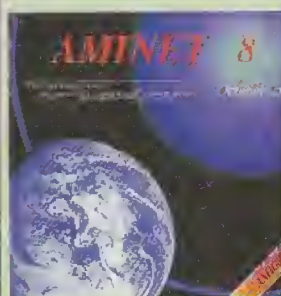
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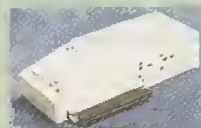
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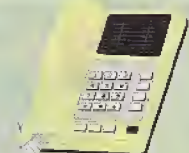


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Imagine 4.0 out

Both the Amiga and PC incarnations of Imagine have now hit version 4.0. The new version has, predictably, many new features, and seems squarely targetted at the Lightwave market, with a new motion blur feature and a metaballs editor with special effects, for example.

Among the more than 50 new features are extended "States" to include object attributes, improved and extended DXF loading and saving, FLC and ANIM global brush and backdrop support, image and animation viewing from within Imagine, field rendering, access to object attributes from the Stage Editor, perspective viewing from objects and lights to Stage Editor, "Smart Bones" to speed up subgroup assignment, support for hi-res, colour graphics workspace, lots more mapping options, colour texture previewing, and much much more.

The upgrade to Imagine 4.0 costs \$US100. Contact Natdisc on (02) 544 1874. RRP is \$789.



New Amiga bundles

The precise composition of the Amiga-and-software bundles that should be on the shelves as you read this has been announced.

The A1200 bundle has a 1200 with (only) 2Mb RAM and a 170Mb drive (against the 40Mb drive which came with the old machines). The software bundle comprises Photogenics 1.2 SE, Wordworth 4.0 SE, Personal Paint 6.4 SE, Datas-tore 1.1, Turbo Calc 3.5, Digita Organiser, Scala MM300 and two games, Pin-ball Mania and Whizz. The retail value of all this software would be around the \$1000 mark, which makes the \$1200-odd price of the bundle not bad at all. Mind you, you still need to get a monitor, and one of the new-model Microvitecs with inbuilt speakers that are being sold with Amiga badges on the front will set you back around \$700.

A4000T prices will, predictably, be rather steeper. There are two variants of the A4000T, with either a 25MHz 68040 or 50MHz 68060 processor, each of which has as standard a 1Gb hard drive and 6Mb of RAM -

again, a bit light-on in the RAM department. You also only get a double density floppy drive, since the non-standard half-speed Chinon drives were apparently too difficult to get in time for the machine release.

The software bundle with the 4000s is the same as the 1200 bundle, but with the addition of a rendering program - either Lightwave 3.5 or a similar almost-current version of Real 3D. This brings the software bundle value up a bit further - which is just as well, since Australian prices

for the 040 and 060 A4000Ts will be around the \$4700 and \$5700 marks, respectively, sans monitor.

For people other than video freaks, the A4000 prices are much less appetising than the A1200 ones. For \$6400 (the price of a 4000T/060 plus monitor) you can get a decent IBM clone with a 133MHz Pentium (better than twice as fast as the 060 for raw number crunching), 16Mb RAM, 2Gb drive, OK monitor, quad speed CD-ROM drive, Windows 95 and a ton of good bundled software.

Call your local Amiga dealer for more information.

AMIGA

US Amiga distribution

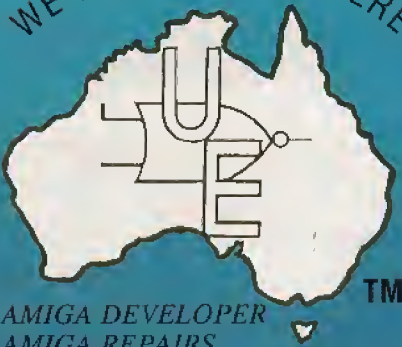
Amiga Technologies have signed a non-exclusive North American distribution contract with Sevice Management Group, the company that used to do Amiga warranty support in the US. The contract will last until the end of this year.

Contact SMG on +1 410 992 9975.

Newcastle user group

Amiga users in the Newcastle area can contact the Mutual Amiga Computer Enthusiasts (MACE) group on (049) 82 7108. The group is aimed at helping beginners make better use of their Amigas and at providing general mutual assistance in all fields of Amiga use.

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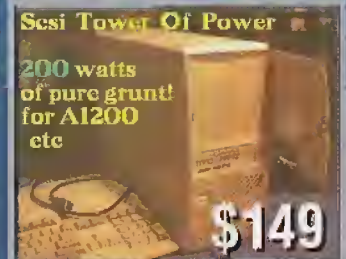
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Another kids show

D. Banks of Marrickville NSW, David Atkinson of Wauchope NSW and Jay Paul in Queensland all spotted an A2000 sitting next to the presenter of an ABC educational program (what is it with Amiga spotters and educational programs?) called The Acme School of Stuff. There were a lot of Amiga-ish graphics in the show, and some Amiga speech synthesis too.

SBS and Robocop

Peter Morgan of Wooloowin Qld spotted an A500 with a Philips monitor on SBS's English at Work, and an actual piece of Commodore hardware on the Amiga-graphiced Robocop TV series - a 1984 with blacked-out nameplate being used by bad guys to watch TV.

2/3 of an A1000

Michael O'Sullivan of RMC Duntroon spotted most of an A1000 in the film "The Real McCoy"; there's the system unit, the monitor and a "brick" style mouse, but the keyboard being typed on by Kim Basinger (with typically out-of-sync audio) is an AT type and not connected to the computer. Ah well.

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► Gilles Bourdin, the PR boss of Amiga Technologies, has been talkative recently in interviews and IRC conferences on the current and future directions of the new Amiga. Here are some highlights!

The first new A1200 came off the production line in Bordeaux on September 11th. About 8000 are being made a week.

The 68060 model of the A4000T should be available in November or December - though the 060 card to be used still hasn't been decided.

An improved A1200 with CD-ROM (probably to be called the A1300), and maybe with an MPEG option like the CD32, will be based on the never-shipped CD 1200 expansion and likely come with 4Mb of RAM, a more efficient CMOS chipset and an 030 processor. This machine may hit the streets in early 1996.

On the same subject, the CD32 seems very unlikely to go back into production, though any third party that wants to license it or the MPEG board for it seems welcome to do so. Bourdin said "We want to do something new next year on the CD32 base", and in a separate conference in London Petro Tyschtschenko, Amiga Technologies' boss, made clear that this "something different" was going to be a set-top box for cable TV, satellite TV, home banking and so on. Petro pointed out the Amiga architecture's clear advantages in this field - a CD32-based set-top unit wouldn't need lots of RAM or expensive top-line processors to work well.

Amiga Technologies' marketing for 1995 will be concentrated on public relations - press conferences, shows and fairs, distributor support and so on. The first new Amiga ads will appear in Amiga magazines (watch this space!), and then some other PC magazines; a

big European marketing campaign is planned for next year, when Amiga Technologies has made enough money to pay for it.

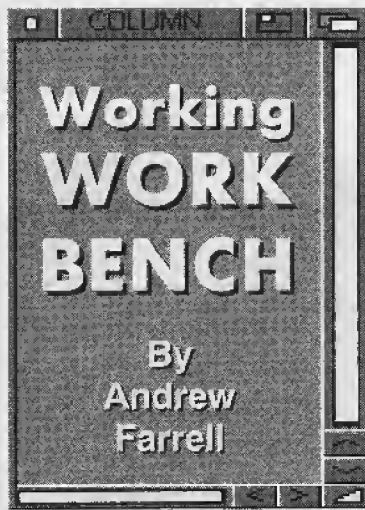
An easy to use, basic Amiga Internet package is being planned - and is sorely needed. Amiga Technologies want the package to come on one disk and run on a 1200 connected to a TV, for super-budget Net access.

Spare parts for all Amigas right back to the A1000 (!) will be available from Amiga Technologies in Braunschweig - and none too soon, either, as stocks around the world dwindle.

At the moment, Amiga Technologies plan to have Amiga research and development headquartered in Germany. This poses some problems, because not all of the US ex-Commodore and other developers who want to work on new Amigas also want to move to Germany, but apparently enough are willing to for Amiga Technologies to stick with the plan.

Macrosystem, the makers of the DRACO pseudo-Amiga clone, have licensed the Amiga technology and can therefore be expected to make more compatible versions of their howlingly fast professional graphics and video machines. At the moment, the range of software that can run on the DRACO is limited - but for the money, it clearly beats other non-linear video systems.

Gilles Bourdin can be contacted at Amiga Technologies on +49 6252 709 195, fax +49 6252 709 520, email gbo@amiga-tech.de □



A new twist on databases

Amiga owners have been blessed with some pretty amazing database programs over the years. Superbase Professional was always an impressive offering, however the lack of online help and no multiuser capabilities for networking have meant it never offered a complete alternative to software on other computers.

Despite this some have managed to squeeze record locking, a process vital for multiuser functionality, out of the original Superbase offering. RMF, the people who make the QuickNet card, have told me this is possible and that they have done it for one large client in particular.

With record locking, if one user opens a record, and someone on another machine tries to access the same data, they may view but not alter the data already being edited by the first user.

Envoy 2.0 supports record locking. RMF say the the next version of their software will also sup-



Top: An organiser that will dial calls for you

Middle: A relational database of music that can enter track lengths using AREXX.

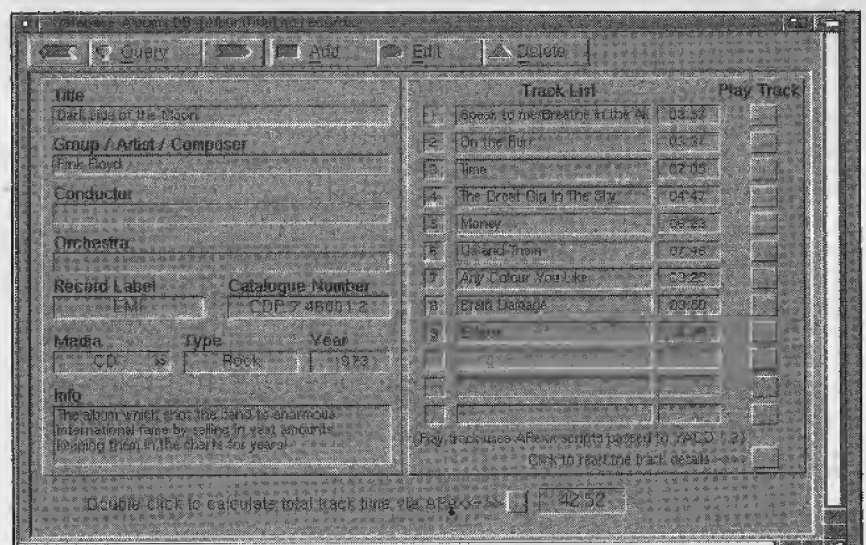
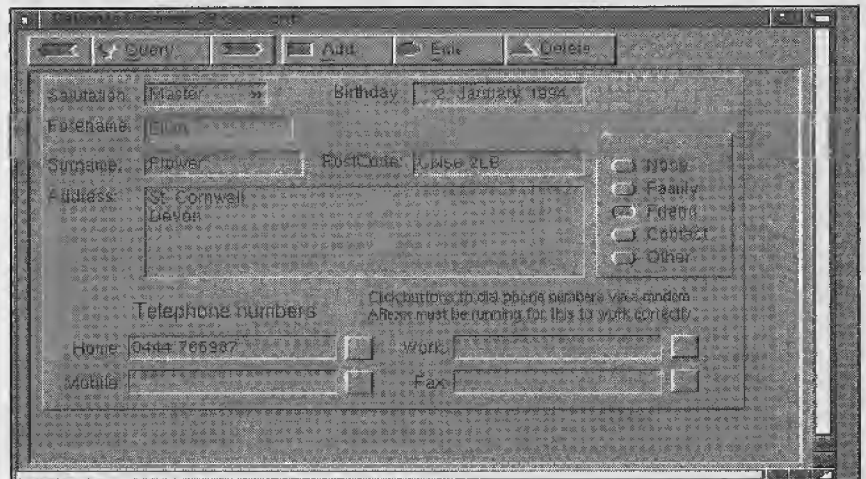
port it. All we need now is a database that permits record locking.

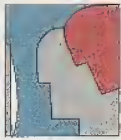
Word is that Superbase will be with us once again with the rebirth of Amiga in Europe - stay tuned for more info on that one. You can get the Pro version even now, however the cheaper and simpler Personal version is a more difficult proposition. Let's hope they bring it back, as Personal was a splendid program, that with a slight overhaul could offer the right combination of ease of use and price many people want.

In the mean time, a new database called Twist has surfaced from HiSoft to compete with the

likes of Datastore. Previews in overseas magazines have described a powerful program for the price. We managed to obtain a demo version off the Internet, and found Twist indeed has plenty of power. HiSoft have seen fit to include very little in the way of hard information with the demo copy - which seems a daft decision. There are three example databases, which show off some aspects of the program.

The most impressive feature for the price (probably around \$150) is the fact it is a relational database, along with excellent report and form design ability. Most cheap database programs are





Group Name	Album Title	Record Label	Media	Album Info
Tschalkowsky, Peter	1812 Overture, the	D. Gramop	CD	
Eurythmics	1984 (the love of big bro	Virgin	CD	This duo enjoyed enormous succ
Strauss, Richard	Also Sprach Zarathustra	D. Gramop	CD	Contrasting work about a learn
Pink Floyd	Animals	Columbia	CD	An analysis of human nature by
Eurythmics	Be Yourself Tonight	RCA	CD	This duo enjoyed enormous succ
Stranglers, the	Black and White	EMI	CD	
Strauss, Johann (the 5	Blue Danube, the (& othe	D. Gramop	CD	This disc contains some of what
Ciff, Carl	Carolina Burana	IKM	CD	Intense and moving piece which
Erasure	Chorus	Mute	CD	
Pink Floyd	Dark side of the Moon	EMI	CD	The album which shot the band
Stranglers, the	Dreamtime	EPIC	CD	
Jarra, Jean-Michel	Equinoxe	Polydor	CD	Son of Maurice Jarre (famous fil
Yello	Flag	Mercury	CD	Album includes the singles "The
Uvafdi, Antonio	Four Seasons, the	Archiv	CD	
Handel, George Frideric	hello			b.1685 d.1758
Bush, Kate	Hounds of Love	EMI	CD	
Handel, George Frideric	Messiah (highlights)	Conifer	CD	
Sax Pistols, the	Never Mind the Bollocks	Virgin	CD	The pistols' one and only album!
Oldfield, Mike	Omnadawn	Polydor	CD	Oldfield's third record which dr
Jarra, Jean-Michel	Oryans	D. Gramop	CD	
Holsi, Gustav	Flamets, the	EMI	CD	Probably Holsi's most famous
Stranglers, the	Rattus Norvegicus	RCA	CD	Their debut album which include
Eurythmics	Revenge	RCA	CD	This duo enjoyed enormous succ
Eurythmics	Savage	RCA	CD	This duo enjoyed enormous succ
Rimsky-Korsakov, Nicol	Scheherazade, op.35	Philips	CD	Tale of "1001 Arabian nights" in
Eurythmics	Sweet Dreams(are made	RCA	CD	This duo enjoyed enormous succ
Beethoven, Ludwig van	Symphonies 5 & 6 "Past	D. Gramop	CD	Symphony No. 5 in C minor, op.
Beethoven, Ludwig van	Symphony No. 3 "Eroica"	D. Gramop	CD	Symphony No.3 in E flat major,
Erasure	The Innocents	Mute	CD	
Roger Waters	The Pros&Cons of Hitch	EMI	CD	
Bush, Kate	The Sensual World	EMI	CD	
Pink Floyd	The Wall	EMI	CD	Another concept album, anothe
Bush, Kate	The Whole Story	EMI	CD	Kate's "Best of" album.
Eurythmics	Touch	RCA	CD	This duo enjoyed enormous succ
Oldfield, Mike	Tubular Bells	Virgin	CD	The debut album for a virgin Dre

Top: You can view records as forms - or in a list.

Middle: Forms can include action buttons and graphics.

By designing a carefully organised form, all this information can be presented in a meaningful way. The neat thing about Twist which is also demonstrated in the very example just mentioned is the use of AREXX scripts to gather data, or to control things from a form. Track lengths can be input into the CD database at the click of a button with the help of a CD player program and AREXX talking to the database program. A track can be played from the database by clicking on the play button, which in turn talks to the player program and plays the right track. You have to have the appropriate CD in the drive of course.

Hybrid applications such as this are what the Amiga excels at. Bringing together many programs by use of AREXX running in a true preemptive multitasking environment can still be done cheaper on an Amiga than any other personal computer.

Twist has a smart forms designer, and useful functions that can calculate fields, act as report filters and search criteria. The pictures tell the story as well as I can! I look forward to writing a full review after obtaining some instruction on the program. For now, it looks like Twist will be the affordable database of choice very soon.

Can't wait? Get the demo version from Amiga Review for \$5! Call 1-800 252 879.

Aminet Database
AREXX scripts, 56kbs & forth design © HISoft 1995

FileName: @File.1ha Description: A datafile manager

Directory: /biz/dbase

File Size: 12 IK

Age: []

DMS Start/Stop: 0-79, 0-40, 40-79

Write To: DF0, DF1, DF2, DF3, RAD

FTP! You can FTP selected files using the AmiTCP/IP software.

No. Files: [] Aminet Site Name: []

Location: [] IP Address: []

Click to extract/view file-->

Click to see readme file-->

FTP your selected files-->

Add file to the FTP list-->

Clear files marked for FTP-->

Files to be FTP'd - Click to update

merely flat file - which means you can have one database or file, made up of many records, containing information about one thing.

In a relational database, you can take the records in one file and relate them to the records in another. For example, you may have a file of customers, and another file of transactions. A relational database would make it easy to view a customer record and then see the transactions that same customer made automatically. Another example is included on the Twist

demo. You have a database of bands. You have another database of songs. A third database contains CDs. Put them altogether and you have a reference to music - look up a CD and you see details of the songs and artist from the other databases immediately. Relationships are normally established by having a field in each database in common - in this case the CD name in the CD database and song database, and then the artist name in the CD database and the artist database.



ED Sirius Genlock

Software controllable

By Peter Blasina

► The ED Sirius Genlock is one of the most sophisticated to hit the video market, offering features like audio mixing and sound processing, video image processing, timed auto AV fading and keying.

The advanced features of the Sirius let you process and enhance both video and audio signals. Perhaps the most significant aspect of the ED (Electronic Design) Sirius Genlock is it seems to be designed with a "video bias" from the ground up. It addresses all the needs of the video maker, rather than working from the perspective of being a computer based product that grudgingly accommodates the video aspect of the equation. It is more a serious post production tool than simply a way of combining video and computer images.

Ignoring the genlock part of the



Below: Offering the sort of power you would expect in dedicated video gear.

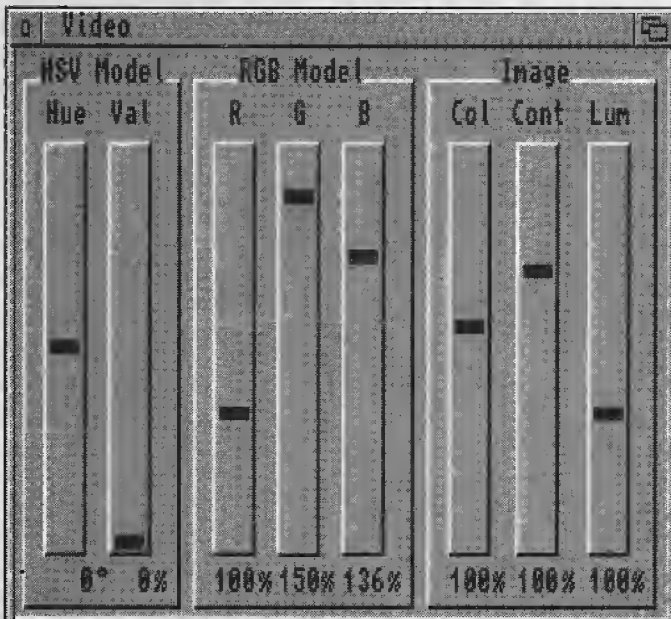
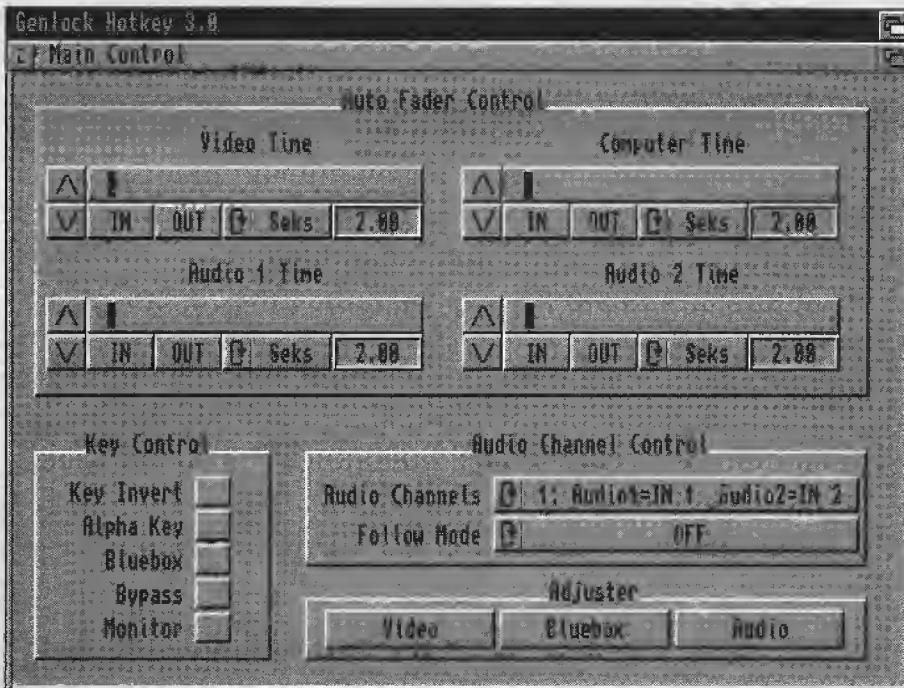
Sirius, ED could easily give a few video accessory manufacturers some serious lessons on how to make a really practical video processor! This unit provides more image correction than virtually any other product in its price category. In fact, I'd go so far as to recommend the unit for that alone, even if you didn't have a computer. The Sirius and the ED Time Base Corrector provide the videomaker with the kind of post production facility

that only two or three years ago would have cost in excess of \$25,000.

Patching-In The Sirius Genlock

Videomakers will find the Sirius operates more like a video mixer/enhancer, with the additional benefit of being able to integrate computer video. But first a brief explanation of the genlocking





function. A genlock is a gadget that combines video and computer images so they can be seen simultaneously on a TV screen. This means they can be recorded directly from the computer to video, superimposed, keyed or mixed with live video depending on the requirements of the production.

brightness of the signals so the two signals match each other. The Sirius can also be software controlled - which also makes it ideal for use in multimedia presentations.

Connections and Layout

The rear panel is relatively easy to follow, providing easy connec-

Left: Many of the genlock functions can be controlled from a commodity offering definable hotkey shortcuts.

tions for videomakers to patch their cables into. There is a single set of video inputs and outputs - RCA for composite and four pin mini-DIN for S-Video. There's also a set of RCA and four pin sockets as outputs. These outputs can actually double up, because both the composite and S-Video output sockets receive signals simultaneously; the RCA could be used with a TV monitor, while the S-Video dubs to a record VCR.

There are three audio inputs - two sets of stereo RCAs and a 3.5mm stereo mic socket, feeding the three channel audio mixer. There's one stereo output to go to the VCR for recording. This means that it is possible to mix the original sound accompanying the video, add music from a tape player or CD and add a narration via a microphone.

Between all the video sockets are three multipin computer sockets. One 23 pin socket is for connection to a Pegasus encoder board for use with PCs; the other two are the serial control port and the 23 pin video port to patch the output to the Amiga's monitor.

The front panel layout of the Sirius is not dissimilar to ED's highly regarded TBC. There are two sets of T-bar sliders; the main set is used to control the levels of the computer and video signals. They're calibrated from 0 to 100%, with a central scale showing Seconds. This makes it possible to use the sliders as a fade control as well. The fading time can be pre-



programmed between 0.2 and 20 seconds so that it works automatically when selected, or you can run it manually by adjusting the sliders.

The left hand side is the Image Control panel. The LCD screen is critical here, as it displays the settings for each control. All the switches on the Sirius use comfortable membrane-type buttons which are easy and direct to use.

There are three general controls, providing Luminance, Contrast and Colour (Chroma) adjustment. A broad range of adjustment is possible using these - colour 0-150%, contrast 20-130% and luminance 70-130%. This copes well with poor video, making it relatively easy to correct errors. There's also separate red, green and blue correction, possible which can be used to accurately address white balance problems in the video signal or match computer output colours. Settings programmed into the Sirius are held in a non-volatile memory, so you don't need to reset them after the genlock is switched off. You can also swap all settings between Default and User Defined.

The lower part of the fascia houses 11 adjustments plus the power switch. Most controls feature a red LED indicator, and are grouped by their function for convenience.

The first set of buttons are marked Status Control and allow selection between RGB or video display on the Amiga monitor. Local or Remote provides selection



Right: Image and sound processing on-screen.

between software or direct control of the genlock's functions.

The Keying Control group provides the ability to toggle between the different keying methods available on the Sirius. There are actually eight different keying options available.

You've probably seen graphics on television which appear to be transparent. This effect can be achieved in one of two ways. The first is to only partially fade up the computer graphic. Fine for some applications, but you can't have any area which is at 100% - the whole image will be at partial strength. What you really need is the ability to define transparent areas. This is the job of the alpha function. With alpha mode selected, every second possible slider position when adjusting the RGB levels for a colour in any paint program will trigger alpha mode. In

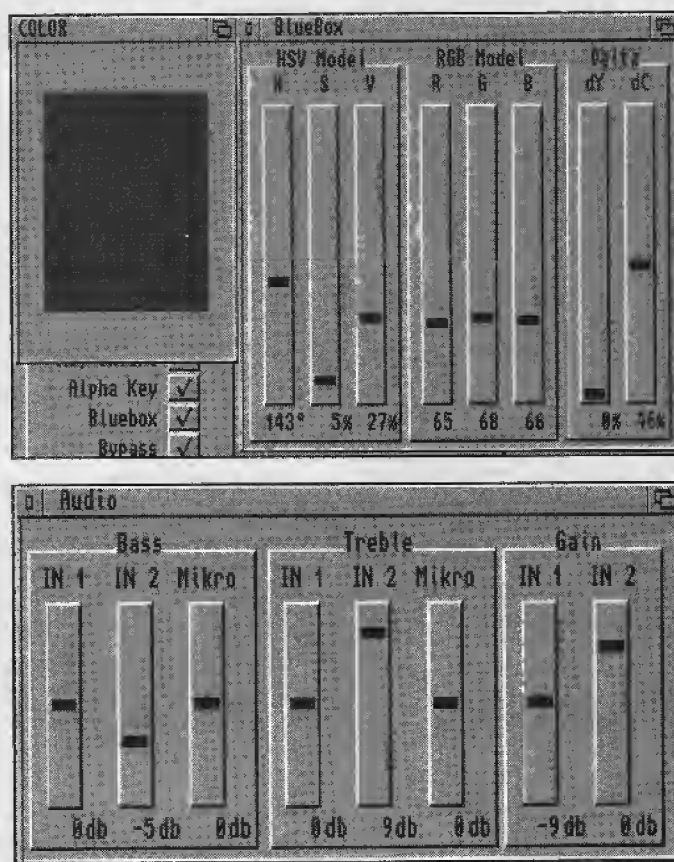
that setting that colour will be transparent.

Actually, you get exactly 50% PC and 50% of the original video. The result is you can easily have solid text over a transparent background.

Alpha mode can also be used to create anti-aliasing around text - in fact it's the only way to do it when the text is being keyed over a video background through colour zero.

Professional Chroma Keying

By using the keying control you can create professional looking superimpositions, much like those seen on the TV news. This is called Chroma Keying, and you do it by placing the subject in front of a single colour background, usually sky blue. It is then possible to





Left: The well organised controls are a pleasure to use.

replace or key the background colour with an image, and it appears that the subject is standing in front of the image - the way weather presenters stand in front of a map of Australia.

The function is labelled Blue-Box on the Sirius, and it works a treat. It's quite forgiving, provided you use a strong but flat light, so the subject and the background are evenly and equally lit. The results are some of the best keyed effects I have seen. I was able to put my son into an episode of *The Simpsons*, and he was mightily pleased!

The Fade Control group offers an assortment of options. You can automatically or manually fade either the video or computer signal, and the fades are solid, completely blanking the screen, with no signal show-through. As mentioned, in auto mode you can set the fade timing from 0.2 to 20 seconds.

The audio panel offers incredibly sophisticated control over audio processing and mixing. Treble and bass levels can be adjusted independently between +12dB and -12dB (in 3dB steps) for each channel, including the microphone. You can also adjust the overall level of the output channels, and the micro-

phone gain. You can do simple linking of audio to corresponding video, but the Sirius can do better than that.

You can link the audio fade directly to the video/computer fades, or link the audio channels to the video and computer channels. You can also do cross-fades.

The only serious flaw here is that the Sirius does not offer a headphone socket so all these complex audio adjustments can be monitored. They can be heard using the TV's speakers, but this is really less than satisfactory. With this level of audio mixing, headphone monitoring should be mandatory!

On The Test Bench

The Sirius' output signal is excellent. A clean 280 lines of horizontal resolution in composite, and over 400 lines in S-Video. Remember that this can be deceptive at times, because while the horizontal resolution may appear to allow zero loss, computer images aren't likely to survive the encoding and transfer process without noticeable degradation.

With the capacity to adjust the main image parameters (contrast,

luminance and colour) plus the RGB elements, many potential problems can be sidestepped.

If you want to incorporate computer generated material in your video productions you will need to look hard to find a better product than the Sirius/Pegasus II combination. It is one of the most practical and useful products that has been tested this year. Not only that, this dynamic duo represents excellent value for money and a level of sophistication that many videomakers could only dream of. And if you having been hanging out to try Chroma Keying then you will find this feature a real blast!

The manual needs a bit of polish - there are some odd translations from the original German - but it can generally be easily followed. The tutorial at the back of the manual is invaluable and offers excellent training in the use of most of the functions and should be worked through to grasp the use of the genlock.

The real advantage of the ED gear is that it opens up the whole world of the computer to be incorporated effortlessly into the amateur's video production. ED have made a quantum leap forward, providing the domestic videomaker with a whole new set of tools and skills to use in their productions.

Contact Peripheral World on (03) 9725 3233 for more info. RRP is \$1749.





to the editor

Happy customer

I write to you regarding Amadeus Computers. In the last 14 days or so, I have sought their assistance in rectifying the chaos I have imposed upon my A1200HD system. You see, I have a series of disabilities from a car accident in my youth, and one of the more frequent is my inability to recall, particularly things of Amiga operational significance.

As I was saying, over the last 14 days Amadeus Computers have donated a total of nine solid and quite frustrating hours of their time, and have rectified all of the problems I have encountered.

This is most definitely customer service and satisfaction. I think it is extremely fortunate that this sort of reliability still exists in this plebian stew we so laughingly refer to as a society.

Leland King, Lalor Park NSW

Ed: We're quite sure that Mr Leland King is no relation to Mr Mark King, proprietor of Amadeus Computers. Well, pretty sure.

Aren't we wonderful

As a recent convert from another platform who's spent all his life's treasures on an A4000 I must say that I'm so glad that the Amiga, and Amiga Review, seem now to have a very bright future. Unfortunately, I was overseas when you had your survey in May and I missed the May/June issues. I think your direc-

tion, as a result of the survey, is probably correct in today's environment.

But you guys have really sucked me in with Amiga Review. One of life's little treats for me is going to the newsagent and purchasing my copy of this great mag. The only thing I can think of that would top my eager expectation each month would be to receive a free sub in the mail! If you won't do this, how about letting me know if Australian landscape DEMS are available for Scenery Anim 4 or VistaPro 3?

Second question. I have MagicWorkbench 2 and it hasn't run as smoothly as I would have liked. Since installation I've had read/write errors during the start-up sequence. People in the know have assured me this should not happen but since removing the program from the machine everything has returned to normal!

One final plea. Can you PLEASE, PLEASE, PLEASE do an in-depth article on the IV24, especially on tuning it in. I know it's a dead card but Opalvision is not yet a real option and the IV is about all I can afford.

Once again a top magazine and don't worry, I'll still buy it even if I can't pluck a freebie out of you.

David Edgar, Muswellbrook NSW

Ed: Thanks for your effusive praise, David! Unfortunately, we don't know if there's any particular source for Australian landscape Digital Elevation Map files - if anyone does know, drop us a line and we'll pass on the info.

Your MagicWorkbench problem sounds as if it's caused by an error on your hard disk. The error fell on one of the files MagicWB looks at as the system starts, so you got read/write errors during startup. The symptoms may have gone now that you've deinstalled MagicWB, but the problem will remain. Give the drive a going over with Quarterback Tools, Amiback.

Tools or DiskSalv 2 and see what you find.

We're not especially knowledgeable about the IV24, but that doesn't preclude our running an article on it - if anyone feels like doing a piece on advanced IV24 twiddling, give us a call and we'll see!

Fight the power!

I am writing to you to air my opinion on the future of the Amiga and why it is extremely important to the future of the computing world. I have two main reasons for my theory.

Firstly, the demise of the Amiga would give IBM, Microsoft and Intel what they want - world domination. The computing world needs a computer that's a viable alternative to the current crop of IBM compatibles. With

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Apple and IBM working together on the PowerPC, the difference between the two is slowly disappearing. A monopoly in a market like this would oppress innovation and new concepts and force people to conform.

Secondly, the Amiga provides a middle ground in price between games consoles and IBM compatibles. You can play excellent games on an Amiga, but also do homework and many other activities. How many professional games programmers started on an A500? Without the Amiga, such talent would most probably never have been discovered.

The abovementioned reasons are, in my humble opinion, the main reason why the Amiga must survive. The Amiga certainly has to catch up in some areas, but there's the basis here for a good computer. A decent marketing campaign and an enthusiastic, innovative development team will ensure its future viability. I thank you for your time, and commend you and the Amiga retailers for sticking with the Amiga.

*Paul Morabito,
Cabramatta NSW*

Ed: *While, generally, we agree with you, there are a few points that need to be corrected.*

IBM and Intel may be heading towards domination of the world market with the architectures they created, but that does not mean those actual corporations are getting all the money. IBM, in particular, does not have a huge share of the PC clone market and does not collect royalties from makers of IBM compatible machines. And while Intel is certainly the biggest maker of 80x86 processors, AMD and Cyrix are doing well out of the business too with their reverse-engineered clones. And remember that the actual PowerPC processors in those IBM-Apple machines (and, by the way, the alliance has been fraught with difficulties...) are made by Motorola!

More Amiga ideas

As I understand it, there is still no decision as to which RISC processor the next generation of Amiga will utilise. Meanwhile, the advantages of the Amiga are being eroded or have been eroded by competing computer systems.

Most reports I've read suggest it will take 12 to 18 months to complete the next generation Amiga. In the meantime, the existing AGA machines will become increasingly threatened. I have a number of ideas to greatly shorten the development time for the next generation.

Firstly, one of the processors under consideration is the amazing Motorola RISC 602 (as used in PowerPC machines). This should be the chip of choice, as Motorola, Apple and IBM clearly want to encourage its use, and such powerful allies are just what the Amiga needs. Who knows - if a 602-based Amiga gets off the ground, these companies could well include Amiga compatibility in their machines, with the right licensing deal!

Secondly, I have heard that a large group of Amiga devotees around the world are working on porting the Amiga's operating system to the 602. If Escom were to work with these people, this complex process could be done in a fraction of the time.

Thirdly, the new and utterly incredible 3DO M2 console also uses the 602 and its amazing chipset was developed by ex-Amiga developers under the auspices of a company which owes its existence to the Amiga, Electronic Arts. Electronic Arts are also apparently quite open to licensing of this technology. Escom could acquire the rights to use this new chipset (which apparently has many Amiga-like characteristics), modify them somewhat to be compatible with the Amiga's operating system and incorporate the Amiga's unique functions into their design.

Not only would there be an advan-

tage in reducing the development time and costs but the Amiga would be open to a world of impressive gaming software from very major developers. The high-end developers would also be catered for by the sheer power and flexibility of such a system. This move would be to the advantage of both Amiga and 3DO user bases. Old Amiga developers may again work on the Amiga and some very powerful alliances would be created in the industry. The possibilities are endless.

If any fellow Amigans like this idea, I encourage you to bombard Amiga Technologies with it.

Three final questions. Is it true that Macrosystems have developed some libraries for AmigaDOS for use in their DRACO compatible which allows a Zorro-based Amiga to be accelerated by a DEC Alpha processor? I have heard that Macrosystems are allowing it to be utilised by Amiga Technologies. This would be an excellent interim measure.

Are we going to see the Amiga in that wonderful minitower case any time in the future? The Amiga should be encouraged as a creative user's computer, and should look the part. I want one, and two of my PC owning friends were virtually sold on the case alone.

Mitch Harwood

Ed: *The 602 is an excellent processor and would, as you say, be a good choice - although it seems to us that the Amiga being able to run PowerPC and PowerMac software is more of a selling point than other machines being able to run ours.*

Our information may be out of date, but the Amiga OS Replacement Team, a voluntary group of people working towards improving the Amiga operating system, seems to us to be in the wrong position to actually achieve anything, and have, as you note, failed to get any sort of association happening with Amiga Technologies, surely

essential if they're to have any real input. Presumably some of their number will, if they're any good, end up working on the project officially.

Using 3DO technology as a new Amiga base could be an idea, if an amicable licensing agreement could be agreed upon and the addition of the extra componentry (disk controller, keyboard and so on) and construction of a "real computer" OS aren't insurmountable problems. 3DO might, in fact, be more enthusiastic to cut a deal now that their slow-selling console's being trumped by cheaper, more powerful options like the Sony Playstation.

The Macrosystem DRACO can indeed use an Alpha processor for prodigious performance, but it is not an Amiga - it does not run AmigaDOS, and its Alpha accelerator board is in no way transferable to a regular Amiga, which would need to have

AmigaDOS rewritten to use the new processor.

The funky case presented by Escom as the A4000T-of-the-future was just a design exercise, and will never appear in exactly that form, because the four-bars logo's been scrapped. The first run of A4000Ts will look like the 200 or so Commodore actually made, and the final cosmetic design is presently anyone's guess. But if that's what it's come to - people buying computers because they're pretty - I vote we give this game up and take up turkey farming.

Why no Postscript?

In your article on TurboCale v2.0 in the July '95 edition of Amiga Review, Owen James raises the point that the program has no Postscript output. I absolutely agree that this is a problem, but I feel I could be more specific in stating that ALL programs

that are to supply some sort of printed output should use outline or Postscript fonts. For Amiga programs to get even halfway close to those on the PC they MUST provide this flexibility and professionalism. This should be a service built into the OS that programmers can easily tap into (see other platforms). I'm aware of the bullet.library that comes with the later OS releases, but to be honest it's really way too slow to be of any use. This is probably another example of Commodore (R.I.Pieces) making a mess of things. At the moment there are a couple of good word processors for the Amiga with reasonable outline font engines, but here's no common format. I feel this must be addressed in the OS if the Amiga is going to survive.

Mathew Wilson, Adelaide SA

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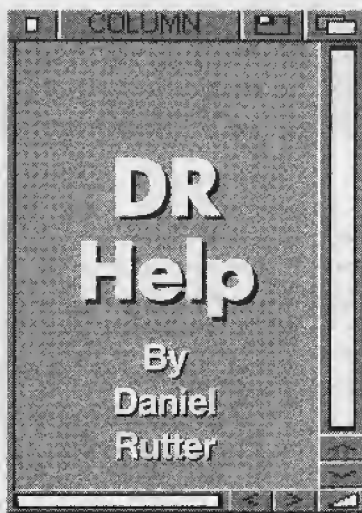
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PC-Task questions

I have a standard A1200, and I've been hearing about a program that will run the PC program "Windows". The program is called PC-Task version 3, I believe.

What I would like to know is how much of Windows (version 3.11) PC-Task can run. I need to be able to use Windows for work and I don't want to buy a PC. What other Windows based programs will PC-Task be able to run, and to what extent?

Every Amiga retailer I talk to gives me a different answer about how this program performs, so I was hoping you could help me.

Justin Morris

Dr Help: *I reviewed PC-Task 3 in the February 1995 Amiga Review; check out that issue for the full story. Essentially, PC-Task's designed to run DOS software. It can emulate an 80286, and can thus run Windows 3.11 (though NOT 3.11 for Workgroups, which only works on 386 and better). On your machine, it'll even be able to run Windows in 256 colour mode.*

But you won't like it.

The reason you won't like it is that it'll be horrifyingly slow. On your 14MHz 68020 A1200, it'll take hours and hours to install the six floppies (high density - so you'll need a new floppy drive or the double density version...), and it'll run, ooh, maybe 1000 times slower than a bargain basement

486DX2/66, with a following wind. No misprint. 1000 times slower.

Using this as a base, if you upgraded to an A4000 with a 50MHz 68060 processor you'd be only around 16 times slower than the abovementioned cheap 486. Mind you, you'd be worse than 100 times slower than the stacked 133MHz Pentium you could get for the same money.

This is all because PC-Task is a software emulator. It translates Intel-processor instructions into Motorola-processor instructions on the fly, and it hence can't fly very fast. I stand by my statement that it's the most PC you're going to get for \$129, but if you want to run Windows - forget it.

Mac competitors?

I do a lot of desktop publishing and image processing on the Mac. I was wondering if there are packages on the Amiga to match the famous Adobe Pagemaker/Illustrator/Photoshop trio. Does Pagestream 3 match up to the Pagemaker/QuarkXPress competition?

Also, now that Pro Draw 3 and Art Expression are not made any more, what would be a good Amiga program to stand against Illustrator? What about Photoshop? Please help!

*Philip Hoosen,
Carltingford NSW*

Dr Help: *In the power DTP department, the Amiga's not very well served. Art Department Professional was a superlative image processing package a couple of years ago, and it's still OK, but Photoshop, Picture Publisher and the like walk all over it. In the combo paint program/image processor market, the genre created by Photoshop, the Amiga only has Photogenics and ImageFX, which are both pretty good. ImageFX comes close to the power of the PC and Macintosh biggies.*

Pagestream 3 has a feature list rather longer than your arm and, point for point, compares very well with Quark, Pagemaker or indeed any other PC DTP package. It's no longer a huge heaving mass of problems like the early "preview" versions and it's now close to usable fast; at the moment, though, you still need an 060 Amiga or a lot of patience to get Pagestream humming.

Pro Draw and Art Expression are about as good as Amiga structured drawing got. There aren't any newer packages, though this could change as the Amiga picks up speed in the marketplace again.

In lieu of actually having these packages on the Amiga, you can of course always emulate the Mac. With Shapeshifter, Emplant or Amax IV and some mucking about you can turn any decently powered Amiga into a Mac and run all the software, and without any of the horrible performance hits PC-Task takes, because the processor type's the same. You can't emulate Power Macs, but nothing's perfect.

Compatible CD-ROMs

I'm a long time reader of Amiga Review and I'm aware you also publish PC Review, so I couldn't think of a better place to turn for help with this problem.

I now work in an accounting firm where we use PCs. I'm a computer consultant, and one of my jobs is to find external SCSI quad speed CD-ROM drives. So far, I've been unable to locate one.

Looking through my Amiga Review over the last few days I've seen some SCSI external quad speeds and I was wondering if they're PC compatible.

Also, do you have any idea of how to put these external SCSI drives onto a Novell thin ethernet network, running DOS and Windows?

Wayne Milen, Moree NSW



Dr Help: *There's no mystic difference between an Amiga and a PC SCSI device; same drive, same connection. You just need a SCSI controller; A3000s and A4000Ts come with them, but no other Amiga and no IBM-compatible has one built in. An Adaptec SCSI card for a PC's cheap enough, though.*

The only difference between an internal and an external CD-ROM drive is the casing. An internal drive has no case - it connects to the controller via a ribbon cable and draws power from the computer's power supply. An external drive has its own box with a cable connector on the back (25 pin D style, or 50 way Centronics, or 50 way Amphenol) which connects to an internal ribbon cable to the drive mechanism. It also has its own small mains power supply - a few external boxes use a plugpack type AC adaptor. It's not rocket science to get a quad speed SCSI drive and external SCSI box separately and put 'em together.

There's no trick to putting an external SCSI device onto a PC network. If it's accessible to the PC it's plugged into, it can be shared like any other drive using, say, Windows for Workgroups.

SX-1 enquiries

If I purchase an SX-1 unit for my CD32, will the machine be equivalent to an A1200 with a CD drive? Are there compatibility problems in Amiga CD software?

Is it AGA compatible, and what Workbench will it run?

Will there be power supply problems with a floppy and hard disk drive added?

**Richard Beckman,
Burleigh Heads Qld**

Dr Help: *The SX-1 indeed does turn a CD32 into a funny looking but fully functional A1200 plus CD-ROM, only it still has the Akiko chip and is hence still per-*

fectly compatible with CD32 games (Akiko has to be software emulated for 1200s running CD32 games). The CD32 comes with Kickstart 3, and with SX-1 will run Workbench 3.1 perfectly.

Your power supply ought to hold up, as long as you don't run an old, big, power-hog hard drive. The little 2.5 inch drives that fit inside the SX-1 won't be a problem.

Drive problems

I have an Amiga 500 with an A501 RAM expansion, external drive and Kickstart 1.3.

For about the last 18 months, whenever I loaded a program or game the AmigaDOS screen would appear with a system message saying that the disk had a read/write error. I'd click Cancel, the DOS screen would disappear and the program would load. This message would show up now and then, but lately it has become more frequent.

Now when I try to load any program or game, the drive operates for 30 seconds then stops, and the insert-disk screen appears again, until I reboot or take the disk out and replace it in the drive.

No matter what I do, the Amiga does the same thing. Could you please help me, as there is no Amiga sales or servicing business in my area.

Justin Cleary, Mackay Qld

Dr Help: *The problem's almost definitely in the drive, and it's happening either because the drive is worn out (bad) or just very dirty (not so bad). Let's assume it's just dirty, for the time being.*

For basic drive head cleaning you can use a long cotton swab and some solvent - carbon tetrachloride or meths both work. But this drive's probably clogged up, so you'll have to look inside it. The usual don't-blame-me disclaimers apply in case you kill your Amiga.

Using a 2mm Allen key, undo the hex screws that hold the case together. You won't need to remove the RF shield over the bulk of the computer, just the drive lid. If you're lucky it'll clip off; if you're not you'll need a weeny Philips screwdriver.

With the lid off, you'll probably see a large happy family of dust bunnies. Get 'em out. Don't use a vacuum cleaner, as they're prone to static buildup (for the same reason, don't shuffle your rubber-soled shoes on your nylon carpet as you work), but tweezers, cotton swabs, fingers and blowing are all OK. Electronic cleaning spray (anything as long as it's not 1,1,1 trichloroethane, which eats plastic) can help in tight corners, but don't drown the drive in it.

Clean the heads gently with the abovementioned swab and solvent, let them dry, then turn the machine on with the lid off, stick in a disk and see if the stepper motor that moves the heads has too much crud on its fluted shaft. You can plug your monitor in with the lid off too if you like.

If cleaning doesn't help, your drive's died of old age. As you can see, though, it has just two cables and one or two mounting screws, so swapping it yourself for one bought mail order is easy enough.



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Twin EXPRESS

Connect to a PC

By Daniel Rutter

► Here's the puzzle. You have a PC. You have an Amiga. They are both in the same room. You have a load of files on one of them that you'd like to put on the other. What do you do?

There are a number of Bad Solutions to this problem. They all involve floppy disks. If the files you have to move readily fit on a floppy, it's not particularly annoying to move them that way. But if they don't, you need a cable link.

The expensive way to connect the two machines is with network cards and cable and a TCP link. This will work, and work quite fast, and give proper networking so each machine can see the other machine's drives as if they were its own. But it's also hundreds of dollars. So forget that.

If, on the other hand, you've got a simple null modem cable (want to know how to make one? Read on!) and a spare serial port on each machine, there's a much cheaper solution.

Sure, you can run a terminal program on each machine and upload from one and download to the other, but that's not the best way to do it. The best way is to use a freely distributable program called Twin Express.

Twin Express is not a new pro-

gram, or especially well designed, but it does the job. You can use it between two Amigas, two PCs or an Amiga and a PC, and it's semi-integrated with the operating system at each end.

What's semi-integrated mean? Well, when working from Twin Express running on AmigaDOS or MS-DOS (you move the MS-DOS executable over on a floppy), Twin runs its own little command-line mini-DOS, with basic file management commands and on-line help. On the Amiga it's in a window like any other shell, on the PC it's either running straight from DOS or as a DOS session from Windows or OS/2 or whatever. Twin works from Windows 95, but paralyzes the PC during transfers, and for some reason on my machine it only detects the serial port the second time you run it in each session.

Now, as far as the Twin Express window/session is concerned, all of the devices on the remote machine can be accessed by simply putting a tilde (~) in front of their name, and using a simple Amiga-ish directory syntax. So, from the Amiga, ~c:pics refers to the pics directory on the C: drive of the PC, and from the PC ~libs: refers to the Amiga LIBS: assign, wherever it may be.

The rest of the PC and the rest of the Amiga know nothing of this arrangement - you can't load a text file straight into your Amiga word processor from ~c: - but the system's much more elegant than using linked terminal programs.

About all you have to set up when using Twin Express is the port speed, from 9600 Bps to 115200 if there's an IBM involved in the transfer or up to 290000 if you're connecting two Amigas - with enough grunt to actually drive the serial port that hard. There's no fiddling with data bits, stop bits and parity (not much of a problem these days, but there nonetheless), no handshaking to worry about, no typing "hello" and peering at the other screen. It either works or it doesn't, and if it's getting errors it reports them, so you know if your cable's dodgy or one machine's trying to transfer too fast.

Twin Express supports COM ports 1 to 4 on the IBM side, via simple command line parameters on startup, but you can only use the standard serial.device on the Amiga side - no cheating with baudbandit.device or other stripped-down versions with lower overhead. This is another strike against getting the really fast serial rates working.

Twin Express

Speed

The trouble with cheap networking solutions is they're never fast, and Twin Express is no exception. Running at 115,200 Bps on a plain three wire null modem cable it manages about 9.6 kilobytes per second - far, far from the 400K/s of a half-decent network but good compared to the endless tick, tick, tick of an Amiga writing to a PC disk, followed by the far faster but still tedious reading process at the other end.

If a bit under 10K/s isn't good enough for you, though, simply use a seven wire null modem cable, which you can buy, make or improvise from a standard serial cable and a null modem adapter. Now you can use the Express mode, in which more wires are used for data transfer than the designers intended and the speed doubles. 19K/s or so isn't far short of floppy drive speed, and when you consider that you can easily

specify a range of files with wildcards and then leave them to be pumped over in your absence (or while you do something else on the Amiga), Twin Express starts looking like a pretty good solution.

If you're running two speedy Amigas at 290000 Bps in Express mode, you'll be able to move nearly 50K/s, but realistically, serial transfers this fast aren't going to happen if you don't have a profoundly fast Amiga or, more likely, a third party serial board.

Extra bits

Directory Opus 5.20 will have support for Twin Express built in, via ARExx scripts, so shellobics won't have to do any of that frightening typing and can click their way through the transfers. You can already get scripts to make Opus work with Twin - they're called TwinOpus, they're freely distributable, and they come with a handler to make the basic

mouse file manipulation options work properly, so you don't have to click a button to enter a directory. The setup's not rocket science - you put the scripts in rexx:dopus and set up some buttons according to the instructions, install the patch in the startup-sequence, establish the connection and then run Opus. You need to set up a button for every remote device you want to access, and it's none too swift, but it works.

Getting it

Twin Express is Shareware, selling for \$30 Canadian for a two machine license. You can pick up the unregistered version from a variety of places, including us (1800 252 879, ring now!). Is it an industrial strength, warp speed, impress-your-friends package that'll make you view computing in a whole new light? No. Is it useful? Certainly.

□

How to make a null modem cable

By Daniel Rutter

► OK, you've got your copy of Twin Express (or your two inelegant and clunky terminal programs, or your linkable game) and now you need a null modem cable. You can go out and buy one, and get a professionally made but more expensive cable that might not be as long as you need, or you can make your own. Or can you?

What you need, if you want to take on the task, are two 25 pin D connectors, available from any electronics store. The serial port on the Amiga 1000 is female, and needs a male connector (a female

port has little holes, a male port has little pins); all other Amigas have male serial ports, which take female connectors. Most IBMs have female serial ports, which may be 25 pin or 9 pin; for compatibility, get a 25 to 9 adaptor as well, and maybe a couple of male-to-male 25 pin gender changers to assure compatibility with everything. You can build all of these too if you like, but storebought ones are more elegant.

For Amiga-Amiga connections (since there aren't a lot of 1000s still around), buy two female con-

nectors for about \$2 each at a place like Jaycar Electronics. You will also need two back shells - the plastic bit that goes around the connector. These cost from \$2 to \$3.50 each depending on the quality.

Next on the shopping list is some cable. Depending on the version of the cable you decide to build, you'll need either three or seven strands, which means buying six or nine core shielded computer cable (\$1.50 or \$1.90/m). You can make the cable quite long before attenuation and noise become a



problem - three metres will work consistently and give you plenty of flexibility in placing your machines.

You'll also need a fine tipped soldering iron (1mm or less), since the solder sockets on the backs of the connectors are quite small. Not to mention, predictably, some solder. If the idea of soldering scares you, now is a good time to turn to the games section.

Here's the easiest way to solder into the weeny wire-holes on the back of a D connector. Pre-tin the wire - twist it and apply a SMALL amount of solder to coat it. Now heat the little socket, melt a SMALL amount of solder into it, and carefully insert the tinned wire-end into the molten solder. It's a little unconventional, but it avoids blobs and bridges. Still, a solder sucker or some desoldering braid might be helpful.

Types of cable

There are three basic null modem cable designs. Their wiring diagrams are shown in the accompanying illustration. Note that the two wire colours in the picture are just to show separate wires, so you don't connect the wrong things.

The simplest is the three wire design. This connects the two ground pins (pin 7) together, and connects Transmit Data (TX) on each connector to Receive Data (RX) on the other. This type of cable is easy to wire:

```

2----->3
3----->2
7----->7
  
```

The only problem is that if one of the machines wants a DTR (Data Terminal Ready) or DSR (Data Set Ready) signal, it'll freeze, because the relevant pins aren't connected. You'll run into

similar problems if one machine wants Request To Send (RTS) or Clear To Send (CTS) signals. This makes necessary the full seven wire design, wired as follows:

```

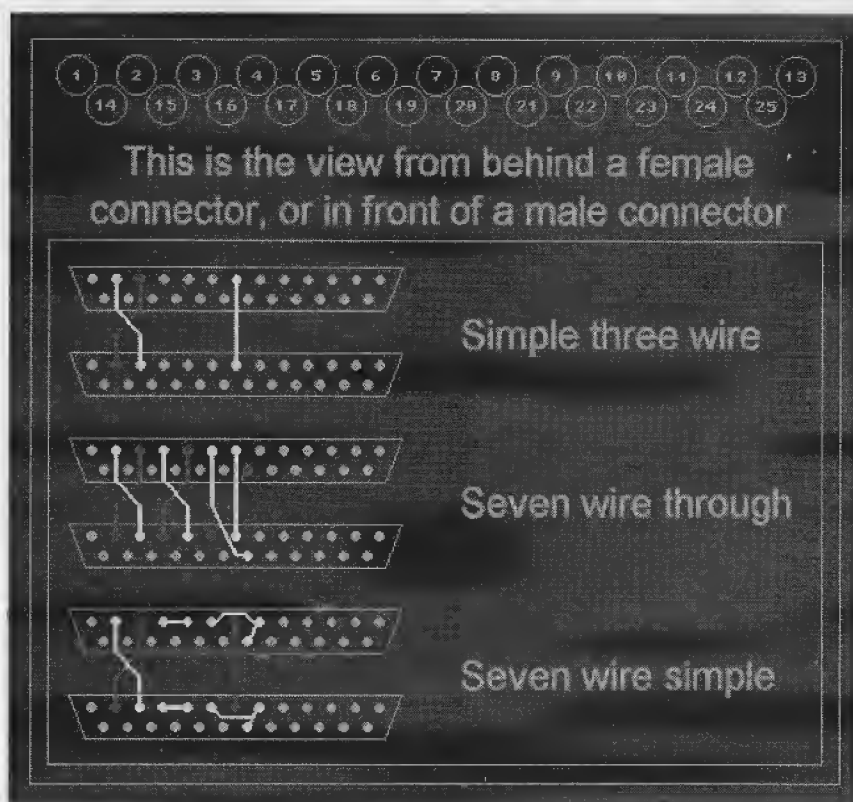
2----->3
3----->2
4----->5
5----->4
6----->20
7----->7
20----->6
  
```

This should keep just about any system happy - but there's an awful lot of soldering involved. So you might like to use the "cheating" version, which doesn't actually connect any more lines between the machines than the simple three wire, but makes it look to each machine as if there's always another machine on the line - even if it's unconnected. There's no good reason for the DTR/DSR/RTS/CTS stuff anyway in most null modem applications. The cheat cable is wired thusly:

```

2----->3
3----->2
4---\ /---4
5---/ \---5
7----->7
6---\ /---6
8---| |---8
20---/ \---20
  
```

Note that pins four and five are connected together ON THE SAME PLUG, as are six, eight and 20. You can connect four and five with a small piece of wire or a blob of solder; the set of three is a little harder. Connect about 20mm of wire to each one, twist the free ends together and solder them, insulating this joint as well to avoid unfortunate shorts. I've been using one of these cables for a while now - it works fine.





Windows 95 versus Workbench

By Daniel Rutter and Andrew Farrell

► It's inescapable. Everywhere you look, there's a Start button or a little note asking you where you want to go today. Whether you like it or not, it's plain that when Bill Gates says jump the computing world collectively put dents in the ceiling, and Windows 95 is rocketing its way towards being the most popular operating system ever.

Gone are the days when Windows was laughable - back in the pre-Windows 3 era. The days when the near-magical feat of making a windowing interface sit on top of the ancient MS-DOS operating system resulted in miserable performance and lousy usability. Windows 95 is smooth, friendly and supremely well promoted.

So the question has to be asked.

All these years we Amiga users have been patiently explaining to PC users excited over the latest technical advance on their platform that yes, it's a wonderful feature, yes, we're very happy for them, and by the way, we had it in 1986-or-so. But now that PC operating systems are getting so very, very powerful, is it just starting to wander into the outermost bounds of plausibility that the Amiga might, maybe, to put it bluntly, be getting sand kicked in its face, so to say?

Well, we at Amiga Review, as

you probably know, also publish PC Review magazine. This means that we use Amigas and PCs all day, every day, and are in an unusually good position to compare them. So let's.

Ground rules

This is an operating system comparison, not an application software comparison. Everyone knows PCs have a lot of good software and a huge teetering mountain of, um, other software. We also know that the Big Name PC applications and games, generally speaking, beat their Amiga opponents on feature lists alone - not that feature lists are a definite indicator of how much you'll actually get done!

There are exceptions, and nobody's saying that many people actually USE all of Microsoft Word's n-billion options, but on a checkbox comparison Amiga productivity apps, in general, go down in flames.

The Amiga's still got it all over PCs when it comes to affordable video work, budget animation and smooth presentation multimedia. The new A1200-and-software bundles are great value for home computing on the cheap.

But we're not talking about

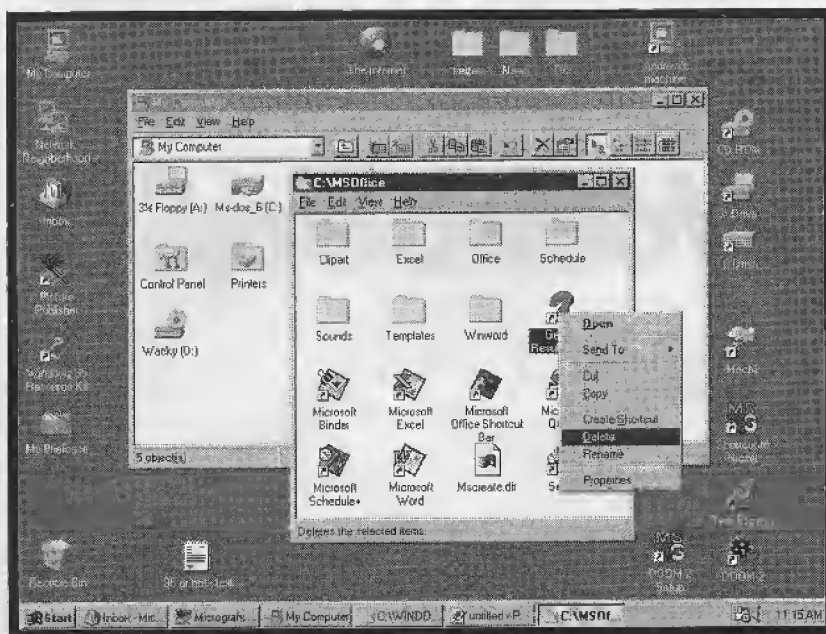
software. We're talking about operating systems; specifically, how well designed they are and how nice they make the computer to use. This is the so called Big Selling Point of Windows 95; it professes to do everything easily and have all you need built in already. How close to the truth is this and where does it leave the Amiga?

Both AmigaDOS and Windows 95 have problems, and not small ones. Let's air the dirty linen first.

AmigaDOS is getting on a bit since the last update. The more-than-a-year hiatus in Commodore development means that even the newest and spiffiest version of AmigaDOS, 3.1, has the same major shortcomings as 2.x.

Memory Management

AmigaDOS has no virtual memory as standard - so you can't use hard disk space to emulate extra RAM for memory-intensive operations. On the other hand, AmigaDOS doesn't need virtual memory just to run a few basic applications. Windows absolutely relies on it as a matter of course, unless you've got 32Mb or more RAM. You can do Amiga virtual memory yourself if you've got a Memory Management Unit



(MMU, present in full 030 and better processors) and the commercial package GigaMem, or a couple of freely distributable alternatives.

But Windows 95 comes with an intelligent, self-adjusting, maintenance-free virtual memory system, which works on every PC from 386 up. You'll need it, and all the RAM you can get.

AmigaDOS doesn't have memory protection. This means there's no way to completely isolate different programs from each other and prevent one rampaging task scribbling all over everyone else's memory - other programs and the OS itself - and bringing the entire computer down in a screaming heap. Memory protection is a priority for future versions of the OS, but it ain't here yet. AmigaDOS is quite good at intercepting programs that have lost the plot, but every Amiga owner is familiar with the flashing red software failure box and the total system collapse it indicates.

Windows 95, on the other hand, is very seldom completely turned into a potato by errant tasks, and can usually kill a crashing pro-

gram and carry on without a hiccup. Even if you strike a program that paralyses the system, hitting control-alt-delete brings up a little Close Program window (much more civilised than the Windows 3.x blue text screen) that will probably show you what's misbehaving and let you nuke it. You can do memory protection on Amigas, using Enforcer, but this is Serious Programmer Stuff, and very, very far from an integrated, invisible part of the OS.

Drive Compression

AmigaDOS has no disk compression as standard. We don't use disk compression on our Win 95 machines, because it makes the computer slower and can cause nightmares if you need to recover data, but Win 95's DriveSpace is as well thought out as anyone's, even though you need to buy the Microsoft PLUS! add-on for \$69 to get the best version.

Compressing and decompressing drives is easy, and your average PC user isn't going to turn his nose up at double the disk space. Again, you can do this on an

Amiga if you like, but the various PD and shareware programs that do it have the same problems as the IBM alternatives, aren't necessarily very reliable, and aren't anything like as friendly.

The flip side of this feature is that PCs chew up way more disk space per application than an average Amiga. Windows 95 needs around 50Mb for a full install, and office suites can eat up 60Mb or more. The Amiga is exceptionally thrifty by comparison. Simpler, trimmer applications, with less power, but more elegance - and much less size.

Networking

AmigaDOS networking can be a pain. You can do it with Envoy, the networking system developed by Commodore and now handled by Intangible Assets Manufacturing, and get proper handling of re-booting machines and reasonable speed.

Or you can use Quicknet, as we are at the moment, and spend a significant portion of your day being alerted to the fact that someone else has rebooted and running kludgy scripts to dismount and remount their drives. AmiTCP4.1, the commercial version, is a solid alternative.

However, regardless of which network you choose on the Amiga, some applications quite simply shouldn't be considered - like multi-user databases.

Although Envoy supports record locking, which is what you need to stop multiple database users trampling each other, no Amiga database supports it - so that's where it stops unless you want to write your own system from the ground up.

Windows 95, like Windows 3.1, has easy to use networking built in; all you need are a few \$70 network cards and you're away. Getting the network up and run-

ning is a snap, and remote access to the network resources by modem is also a breeze (once you add the PLUS! pack).

Hardware

The biggest problem with Windows 95 is that it's still running on an IBM compatible PC.

The basic structure of the PC architecture was laid down with the original XTs in the very early 80s; the number of all-important IRQ addresses and DMA channels doubled when the 80286 machines came out in the slightly less early 80s, but that's where the basic system that even today's hot-rod Pentiums are built on stopped developing.

The old 8 bit ISA expansion bus, inferior to Amiga Zorro I, was replaced by the now-standard 16 bit ISA and more recently by VESA local bus and the newer PCI. But most expansions need an IRQ or at least an I/O address, and sorting them all out on a stacked machine is annoying, especially since all expansions don't support all addresses.

Amiga hardware, generally speaking, doesn't need any of this nonsense; plug it in and the computer knows it's there. You might need to run a driver or handler or whatever to deal with your new toy, but it'll just be simple software setup.

To be fair, though, Amiga hardware has its share of incompatibilities. The smaller Amiga market, especially for esoteric high-end gear, means exhaustive testing of new products with other products isn't done and there's no big premium in developing hardware that behaves itself properly. But, generally speaking, with ordinary gear, you plug it in and it works.

Windows 95 does what it can with the cobwebbed hardware architecture it perches on. It can frequently pick the presence of new

hardware on an ordinary PC and, on machines with some leeway, Windows 95 will help you set your system up correctly with very little pain. The expanded, hairy chested Windows 95 Control Panel contains among very many other things a list of all the IRQs, I/Os and DMA addresses in use. If you're out of IRQs, though, you're out of IRQs. Tough!

One of the Big Selling Features for Windows 95 is Plug and Play, which aims to supplant the current system, Plug and Pray. The idea is that you just plug a thing in and it works, just like Macs and Amigas. Wow. Radical concept. Welcome to the 80s, guys.

What Microsoft and most everyone else selling Windows 95 are less enthusiastic to tell the world is that Plug and Play only works if the computer you're using and the thing you're plugging in are both Plug and Play compatible, and few expansions and only the latest PCs are as yet. You can upgrade your computer to true Plug and Play, by replacing the whole motherboard. Yippee.

Without proper Plug and Play,

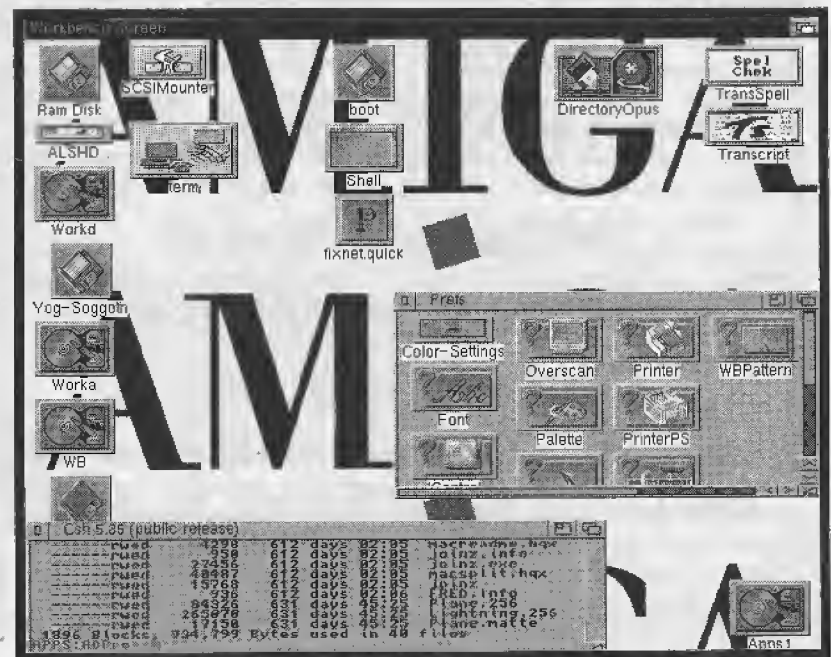
there's only so much you can do in software; no software can magically eliminate hardware limitations, it can only try to work around them as elegantly as possible. 95 is better at doing this than any previous incarnation of Windows, but it is still a far cry from the simplicity of the Amiga.

Compatibility

A significant problem at the moment, which will change as more and more people join the lemming-like rush to Windows 95, is that quite a few current applications don't work properly, or at all, on the new system.

When we recently checked out four big-name remote access programs, which let you control a computer from elsewhere over a modem, one worked properly on Windows 95. Two worked fine after we got the proper patch files. One didn't work at all.

AmigaDOS has its own incompatibility problems, primarily with new software not working on old ECS WB1.x machines but also with old software not handling the new





hardware. Generally, though, the standardised Amiga hardware and OS make Amiga programs a doddle to get running on any machine.



Resource Use

Windows 95 is a huge resource hog. It's not as porcine as Windows NT (32Mb RAM minimum...), but the flat minimum realistic spec for a Windows 95 installation is 8Mb of RAM, a goodly slab of free hard disk space and the fastest processor you can afford - a 486DX/33 if you must, but a Pentium by preference.

In comparison, AmigaDOS is happy on a 4Mb machine with a 100Mb drive (yes, I know it can run from floppy in a couple of megs, but nobody enjoys doing that). Windows 95 programs (I know we're not talking about software, but this is relevant) are also far, far bigger than Amiga applications - this is mainly of course because they've got a billion knobs on and are written by committees whose priorities are features, functionality and getting the thing out on time, not compactness.

Another reason, though, is that Windows 95 is a 32 bit operating system - data is processed 32 bits at a time. AmigaDOS and Windows 3.x are both 16 bit OSes. 32 bit helps speed, but it also means that the smallest size anything can be is 32 bits, the size of a byte, and so executables blow out significantly in size. It's not nearly as bad as monster UNIX variants where a "hello world" program compiles to 1Mb of executable, but when a simple little notetaking utility proudly claims it's only 350k in

size, and the fully optioned Exchange mail system has to hook in to better than 9Mb of assorted libraries just to sit and wait for something to happen, you can't help but wonder how far away this is.

Mind you, a titanic, space-sucking OS is not the problem it used to be. With the relative ubiquity of disk compression software, inefficient and highly aerated code shrinks by a greater amount than more tightly written software, and fast PCs with big hard drives and lots of RAM are not, by historical standards, very expensive at all - certainly not compared with the retail prices of new high-end Amigas. This is no good if you don't happen to HAVE the three grand an 8Mb Pentium costs, but it can't be denied that you get a lot of processing grunt and storage space for your money.

WYSIWYG file management

With Windows 95, mainstream PC users finally get an operating system where an icon really represents a file. OS/2 has done this for ages, as has AmigaDOS, but Windows hasn't. A chronic problem with the old Program Manager, the default Windows interface, was that the icons you saw there didn't necessarily have anything to do with what was actually on the disk.

Icons in Program Manager are made automatically by installers or other programs, or less often by manually creating new Program Groups and Program Items, and all they are is pointers to the actual files. You can delete the groups and items without hurting the files, and if you delete the files then the icons have the rug pulled from under them and don't do anything but complain when clicked. Program Manager under 3.1 also doesn't

support nested directories; you can't put a Program Group inside another one.

Windows 95's drive views, however, are like steroid-enhanced Amiga windows, with more choice of possible display options. What you see really is what you get. People nostalgic for the old disconnected shortcuts, though, will like the much-vaunted Start Menu, the quick-access menu system that holds shortcuts to all of your programs, by default. Like Program Manager, the Start Menu does not notice if you rename, move or remove the files themselves. It goes one better, though; if you try to run something that isn't there, Windows looks for the file elsewhere on the disk, eventually offering you a different named file with the same size if it can find it!

Everything the Amiga lacks in file management at the operating system level is quickly made up for by programs like Directory Opus - for which there is no equivalent on the PC, though Jon Potter says he's thinking about writing one. Yes, we've checked out the Norton offerings and many others. DirOpus is more configurable, more powerful, easier to use, less resource hungry, and easier to customise.

Help!

Online help is a major feature of Windows 95, which makes it far more usable than old-style paper-manualled OSes. Hit F1, no matter where you are, and you'll be looking either at a help file for the particular application or feature you're using or a table of contents of all the help available. You can do index and keyword searches, and some applications support fairly stupid plain-English searching as well.

There's nothing very spectacular about Windows Help files; AmigaGuide can do just about all

of this hypertext, program-linked stuff. But AmigaDOS doesn't have its own online help, and not many AmigaDOS programs do either. You certainly can't fit features like this on a floppy-based OS.

Multitasking

Windows 95 does preemptive multitasking, like an Amiga, as opposed to the cooperative multitasking previous versions attempted. To understand the difference, think of the programs as being like a queue of people waiting to talk to the processor. In cooperative multitasking, the operating system trusts the programs to cooperate, and relinquish control of the computer when their immediate purposes have been served by moving to the back of the queue.

The problem with this system is that lots and lots of programs, because of bad programming, crashes or strange interactions with other hardware or software, don't step aside from the head of the queue, and bring the computer to a shuddering halt as they cheerfully spout gibberish at the uncomprehending CPU. And the lumpen design of earlier Windows versions meant that even simple operations, like formatting a disk, caused a big system slowdown, effectively making even speedy Windows PCs unusable for true multitasking.

In reality, the old Windows multitasking was really a glorified task switching system - use one program for a while, then use another, with all the other programs loaded slowed right down. This is quite adequate for some purposes; the only real multitasking many Windows users do is to run a background print handler, fax program or whatever.

In preemptive multitasking, the operating system doesn't let one task hog the processor. Applications running are allocated a set share of CPU power - and no extra

pulling or tugging should change that arrangement.

Amiga owners are familiar with this; the priority-based preemptive system the Amiga uses means that even with very heavy multitasking loads which cause individual programs to slow down noticeably, the system itself is still snappy and there's no delay in basic operations like mouse movement and screen switching.

Both Amiga and Windows 95 multitasking have shortcomings. Windows 95 slows down when you're multitasking, even doing simple things like using a CD player program with a time display, but generally speaking the system's very well thought out, and locks you out far less often than you'd think.

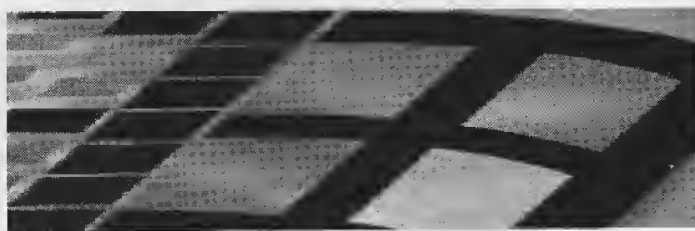
The old Windows had two basic cursors - the pointer and the hourglass, which is equivalent to the AmigaDOS wait cursor that stops you clicking on anything. Win 95 has three cursors - regular and hourglass as before, and also a combo pointer-and-hourglass, that indicates some background task in process, but doesn't stop you working.

Now, in AmigaDOS a wait cursor just encourages you to flick to another screen and get on with something else, but in Windows it means nothing's going to happen until the task is finished. And you'll see wait cursors quite often if you use old Windows 3.x software that doesn't know it's on a smarter OS and insists on bringing everything else to a halt while it thinks. DOS programs that do low-level stuff, like for example the MS-DOS side of the Twin Express file transfer system, can also freeze the rest of the machine. But some other software,

which previously only crazy people thought of running from Windows, works and works well. Like quite a few DOS games, for instance.

If one should happen to be playing a DOOM-type game, for example, in a full screen DOS session from Windows 95, one can switch practically instantly between it and an innocuous looking Windows desktop, should one's business superior happen to pass. On a fast PC, with a fast video card, you still can't switch as fast as an Amiga flicking screens, but it's acceptably close. We ran DOOM on Win 95, purely in the interests of research, and found that while it loads rather slower than if you shut down Windows and run "pure" DOS, it runs just as fast - except for occasional pauses in groups of four, the cause of which we have yet to discover.

The shortcomings of Amiga multitasking become apparent when you play just about any decent game. Goodbye AmigaDOS - the software developers don't want you to play games there. Microsoft want Windows 95 to become the standard PC games underlay, which seems to us not a bad idea, since it sidesteps all of the system-bashing agony that typically goes with running PC entertainment software. For more examples of Amiga multitasking not coming up



to scratch, how about those funky standard windows, like the Workbench Information one, that don't let you click on anything else while they're open? Well, Windows 95 has a few of those too -



and switching between windows is not nearly as fluid.

Generally, though, Amiga multitasking is wonderfully smooth and intuitive, and it certainly makes a mockery of Bill Gates' ill-considered statement that you can't do multitasking in less than 4Mb.

Long file names

Windows 95, at long last, can handle long filenames, against the old eight character, dot, three character (8.3) limit of MS-DOS. Amiga filenames can be up to 30 characters and take basically any alphanumeric form you like; we've had that feature since '85. Windows 95, on the other hand, can do filenames up to 255 characters. This sounds really cool, until you run a DOS or old Windows program and discover that as far as it's concerned `TextFileWithAReally-LongName` is called something like `TEXTFI-1.TXT`. All filenames over the good old 8.3 limit are thus truncated, and everything ends up with a unique name - it just doesn't make a lot of sense unless you're using a Windows 95 program that understands long names. The full name is stored in the file comment.

Now, if Microsoft had managed to set this up any other way and maintain compatibility with old applications they'd deserve a Nobel prize, but this does not change the fact that Windows 95 does not REALLY do long file names, and if a Win 95 user gives you a load of long-named files and a script to use with your Mac or Amiga or UNIX version of NiftyRenderer and the script refers to the long names - you get to rename them all by hand.

But if Windows 95 users exchange files, and nothing clobbers the comments on the way (like a ZModem transfer, for example...), the long names will be intact.

Furthermore, Windows 95 files

still have to have suffixes. The old DOS-Windows combo had a fascinating system with the three character suffix system to identify files (.txt is text, .doc is a MS Word document, .avi is an AVI movie file, .wav is a WAVE format sound and so on), and it's carried over into 95. Now, in 95 you can choose not to see the suffixes at all - the only sign is the default icon Windows gives the file - but they're still there, and if you give a file the wrong suffix some dumb programs may be completely unable to deal with it. Most programs can load misnamed files, but they don't like it; the concept of actually looking at files to see what they are doesn't seem to be very popular with Microsoft.

These file naming shenanigans are prime symptoms of the fact that MS-DOS is far from dead and buried. Just because Windows 95 doesn't have a separate DOS directory doesn't mean the old, crusty CP/M-derived operating system hasn't left its stamp on the shiny new 32 bit OS. DOS has been swallowed up by Windows, instead of ticking along doing all the gruntwork with Windows just the window dressing on top. It's all basically one lump now, but there are still `AUTOEXEC.BAT` and `CONFIG.SYS` files to contend with for backwards compatibility.

The important difference is that now the average user doesn't have to worry about DOS bashing to do any normal task - except, maybe, getting non-Win 95 aware games to run. In that case, the task's not going to be any harder than making them work on the old DOS, and will certainly be more pleasing to the eye, as Windows 95 lets you launch DOS applications with whatever configuration tweaks you like from an icon on the desktop.

While we're on the file system, Windows still has a mania for files to be used by one application at a time. If you're editing a document

in an Amiga word processor, for example, you can flick to your directory utility and rename the file, or even delete it. Not so with Windows, in which many applications maintain a death grip on whatever files they presently have open until you close that project.

Miscellaneous

There are too many minor features of Windows 95 to mention here, but I'll touch on a few.

Cosmetically, Windows 95 is a winner. AmigaDOS with Magic-Workbench or NewIcons with a funky backdrop and a few other PD enhancements looks quite nice. But this level of customisation is a hobby, not a ten minute operation, and to match the high colour displays of a decent PC (not useful for basic OS stuff, but invaluable for image creation and processing software) you need an \$800 or more graphics board that you can't use with an A1200. Amiga AGA is a joke for everything but games, compared with a fast PC video card.

In contrast, Windows looks OK to start with and can be made very snazzy indeed by installing the Microsoft PLUS! package, which includes among more useful things a collection of "Desktop Themes", which allow you to easily alter your icons, backdrop, screen saver and system sounds to one of several styles. This, of course, slows down the system and uses up RAM, but that never stops the Amiga customisers.

The PLUS! pack also gives you dynamic window scaling, in which window contents rearrange to fit new boundaries as you move the corner around. This is genuinely useful, and also looks cool.

On the minus side, Windows still has to restart itself to change colour depth and sometimes resolution. How quaint.

Windows 95 has an automatic

undelete function, which works much the same way as the Macintosh Trashcan and a bit like the freely distributable, and rather elderly, Kan system on the Amiga; deleted files get moved to a directory, and you can empty that directory manually when you're good and ready. The files remember where they came from, which is enormously helpful for odd-named data files.

The standard Windows 95 Recycle Bin, as it's called, only "catches" files deleted by hand, as it were; if a file's deleted by a Windows or DOS application or overwritten by another, you can't get it back from the Bin. If you install Norton Utilities for Windows 95, you can use a Bin that covers all of these eventualities and then some.

Despite all their technical sophistication, Windows programs still don't have very good installers. The installer for Windows 95 itself is marvel, considering the job it has to do, but other software typically comes with very dim installation utilities indeed.

The Amiga has Installer, which everyone sane programmer uses. Write a script, with version checking and as much control as you like, and there it is. All of the Windows installers, though, are roll-your-own jobs, which seldom check to see if there's a newer version of DUMBPROG.DLL on the system but just trample it with the old one, and can do marvellous things like not understanding drives with more than a gigabyte of free space and assuming there must be none.

Knobs on

Windows 95 comes with a pile of built-in stuff. If you get it along with the PLUS! add-on, you get a personal information manager and day planner, perfectly adequate for most people (which can send data to those near-magical Timex data-

bank watches), comprehensive bundled email features that give you faxes, local and Internet email in one place, a decent Web browser, a fun pinball game and a DOOM-engine non-violent race game, a Make Your Life Better By Setting Goals thingy, a program scheduler that automatically runs things at given times, after a given period of inactivity and so on, a defragmenter, a drive compressor, disk repair software, a little paint program, a little word processor, a little database, a sound recorder, a CD player and a calculator.

AmigaDOS comes with... a calculator. One point for Windows, methinks.

True, the new Amiga bundles have good real applications with them, but not many of those will have been sold by the time you read this. AmigaDOS could do with a few more useful utilities as standard.

AmigaDOS is a great little operating system. But there are advantages and disadvantages to being little.

Little OSEs don't need huge computers. But little OSEs also can't contain features that MUST take up lots of space, like monster on-line help facilities.

Windows 95 is a valiant attempt to impose cleverness upon a dumb system. If you are stuck with a wood-fired automobile, you do what you can. And what Microsoft have achieved, overall, is very impressive. There is no way an operating system this complex could be produced in an economical time without using committee coding and living with inefficient results.

And the winner is...

So, which operating system wins? Well, if you're looking for a home computer you can walk away with for well under \$2000 with useful applications and a simple, friendly interface, the Amiga

is it. If you've got twice as much to spend, though, a worked multimedia PC could look very attractive. (When pricing a PC, don't forget to include the cost of the more expensive software.)

Standing well back, we can now make a few statements about the home computer scene in general, taking into account software, hardware and operating system.

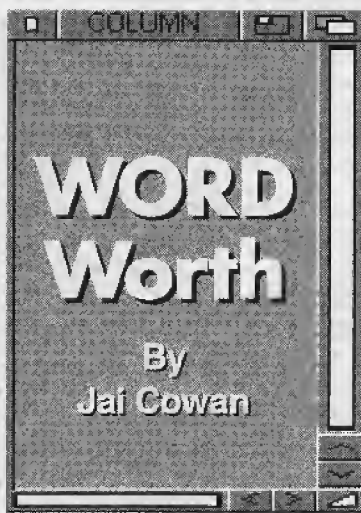
If you want to do budget video titling or drop 2D or 3D animation to video, the Amiga is still the only way to go - you can do it with PCs, but only with an expensive encoder card. PC titling software is not as cheap, or as good. Likewise, Scala on the Amiga is still faster, smoother and easier than most PC equivalents.

Deluxe Paint on the Amiga remains the best 2D animation program. There is no PC equivalent to Hyperbook or something as cheap and easy as CanDo. There are no Blitz basics on the PC, although Klik and Play offers some comparison with AMOS.

Only the Amiga offers multiple screens and windows - Windows on the PC is entirely window based. Workbench has a stronger multitasking feel, and with the right add ons can match Windows for functionality - although not always to every degree. The next version of Workbench may well match Windows better in the bells and whistles department too - like better printer driver control, networking and file management tools like easy linking.

On the whole, Amiga still has a lot going for it - and that's despite the lack of recent developments. It's that fact that holds out great promise for future Amiga operating systems, and is still a great attraction today.

□



Optimising Printing in Wordworth

Wordworth comes with a print manager with its own set of printer drivers, which throw data at your printer in different ways to speed up and enhance printing. If you've got Wordworth and haven't installed the print manager software yet, do it now (see Fig 1). You'll

enjoy improved print speed on slow machines, and lots more control over your printouts.

Print Manager allows you to change all of the colours that Wordworth tells the printer to print (provided it's a colour printer, obviously). This is good, because it means you can fine-tune the print settings to compensate for the inaccuracies of your printer. You can also change the way data is sent to the printer by changing the way Print Manager compresses it. You can have quick graphics printing, quick text printing, a combination of the text and graphics modes, and normal uncompressed data.

You can also do colour separations, which allows you to print colour documents with a mono printer capable of accepting different coloured ribbons or print car-

tridges. You have to swap cartridges and refeed the paper for each colour, which is tedious and can be inaccurate but is better than nothing. If you wanted to print a heap of brochures out, you could just print a colour and then reload the paper into the sheet feeder; printing many sheets also gives the ink more time to dry.

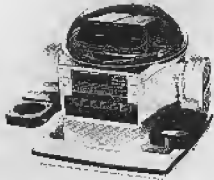


The Wordworth Print Manager also has a mirror option, which is useful for printing to a wax transfer printer using an iron-on cartridge, so your text will be the right way round when you put it on a T-shirt! Another thing I particularly like about Wordworth's printing is the 0 - 100% completion bars for total pages and current page. These not only look very professional, but are quite useful when you're printing a lot of pages and want to

Australian
AMIGA
Review

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14 disks of clip art that will load into Wordworth - \$39.95

<p><i>Disk 1</i> Animals <i>Disk 2</i> Art, Birds, Buildings <i>Disk 3</i> Business, Dinosaurs, Entertainment, Etchings <i>Disk 4</i> Computer, Dogs, Fire, Games <i>Disk 5</i> Fish, Food, Hands, Households, Toys <i>Disk 6</i> Garden, Insects, Maps <i>Disk 7</i> Graphics</p>	<p><i>Disk 8</i> Graphics, Japanese characters <i>Disk 9</i> Miscellaneous, Music, Nautical, Space, Travel <i>Disk 10</i> People, Scientific/Medical <i>Disk 11</i> Outdoor, Signs, 'Toons <i>Disk 12</i> More 'Toons <i>Disk 13</i> Sport, Type <i>Disk 14</i> Transport, War</p>
--	--



To order, see advertisement on pages 54-55



know if you've got enough time to do something else. On a machine like my 4Mb A1200 (4Mb is the least RAM I'd recommend you use, for error free printing; Wordworth has a habit of changing all of your large text to a 3 point font when it doesn't have all the RAM it wants), this "something else" is NOT going to be multitasking, as when printing a document with pictures at high resolution the CPU is flat out pushing data to the printer, and anything else is going to be very slow and frustrating.

If you've got an A4000 with a Cyberstorm accelerator and a three figure RAM count, feel free to print your grocery list (no doubt produced with the aid of tables and templates from my previous tutori-

als) to your Postscript printer while rendering a picture of the grocery store in Lightwave. If you can afford the power, use it damn you - but those of us with slower CPUs and less memory can't perform such a task quite as gracefully.

I hope that in the next release of Wordworth Digita will have fixed the printing bugs. My personal favourite hate would have to be when it prints the first page and then gives you a bonus sheet of blank paper for no reason. No amount of adjusting print borders will fix it, believe me; I've spent many an hour trying to fix it but it appears to be embedded in the program - as is the problem with pictures just not printing at all. Both online help and technical support say it's not enough RAM, but it's

another bug that needs to be fixed.

Speeding up printing

To start with, simply using the Print Manager provided with Wordworth will give you faster printing. Also, if you look at your Print Setup menu, you'll find a density slider which allows you to adjust the density at which your printer puts dots on the page (see Fig 2). For best results with nice curves, use 7. 1 gives an unattractive jaggy look, but it prints a lot faster than 7, so it's good for quick proof copies. Experiment to find out which setting gives the best print time to look ratio.

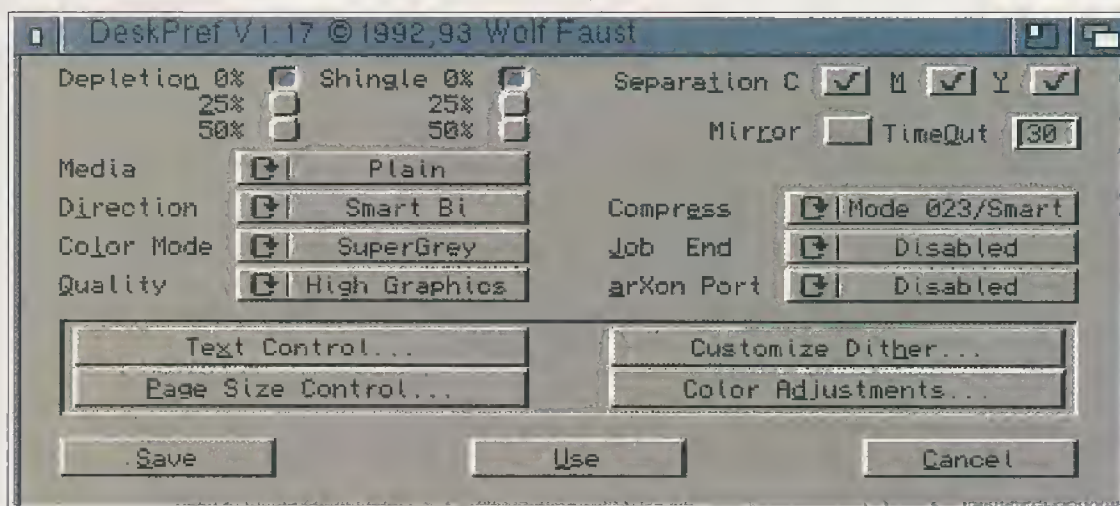


Fig 1.

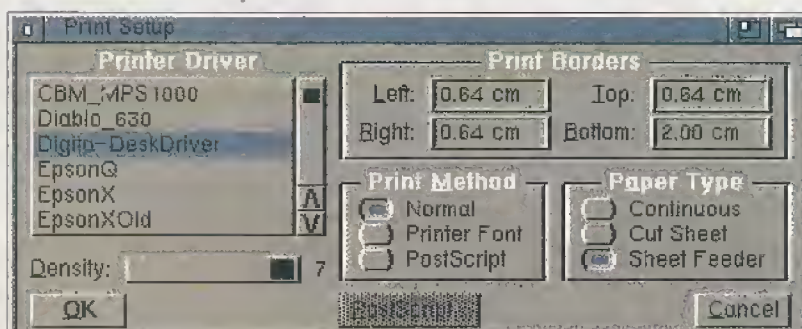


Fig 2.



New on the Net

Local content improving

By Daniel Rutter

► Articles on the Internet are full of dodgy numbers. It's notoriously difficult to get a handle on how big the Net is and how many people use it; the Internet's genesis as an nukeproof, decentralised, self-regulating info-web means there's no central authority you can go to to find out what the big picture is. It's not like CompuServe, run from one location with subsidiaries to handle local operations. CompuServe know, every minute, how many subscribers they have, how many of them are connected at any moment and what they're doing. But monitoring the Internet is a lot more like monitoring the whole real world; unless you've got spies everywhere, you can only see an unrepresentatively small sample of the big picture.

The best method that exists to get a reasonable approximation of Net use is the so-called ping test, which is roughly analogous to the TV ratings system and, like the ratings system, gives you a proportional sample which you have to multiply out to get the real number of people out there.

The degree of multiplication typically varies depending on what's in it for the multiplier.

Since big numbers usually make for a spectacular story for the viewers (or the shareholders), that's what you tend to get. Some more realistic estimates recently came along in a Hambros Equities report into NetComm Ltd.

Now, while the report carried the usual we-might-accidentally-make-some-money-out-of-this disclaimer, and while it was highly complimentary about the future profitability of NetComm (they made a small loss over the last financial year, thanks to restructuring) and the buoyancy of the computer communications market in general, it nonetheless had a much more realistic view of the actual popularity of the Internet in this country and others.

Forget the other countries for the time being. Let's just worry about Australia. How many Australians are actually on the Internet?

If you read and believe the Sydney Morning Herald computer section, you'd swear it was a million. That's what they reckon. But according to Hambros, who used research from Montgomery and Associates, there will be in the

1995/96 financial year about 23,500 small business Internet customers, about 90,400 home customers and 42,000 big business customers. They were using a much smaller estimate of the number of users per business in the big business market, so as to show what a good investment NetComm is even with a conservative estimate of the number of users, so let's go for a non-conservative estimate and say there'll be 100,000 of 'em. You're still talking maybe 220,000 users, with a following wind, which is a long way short of a million, or the more commonly bandied about 600,000.

Yes, the Internet is popular. Yes, its popularity is growing rapidly. Yes, every man and his dog is jumping on the bandwagon; Windows 95, which will for an absolute certainly become the world's most popular personal computer operating system, has Internet connectivity built in, which brings it right into the mainstream from the OS/2 hippie fringe. But a million Australians are not using it, and will not be using it for a year or so yet.



Faster, Fifi, faster...

Joining the multitudinous lures to get those few billion non-Netted people around the world with the program are new, highly funky modem designs. If the new alliance between ADC Telecommunications, a big-time US comms mob and, wait for it, NetComm, has its way, we'll all be using that info-highway fibre-optic cable-TV ultrafast stuff that Telstra promises in its ads.

If all goes according to plan, by mid-1996 you'll be able to buy a box that gives from 64 to 512 kilobits (8 to 64 kilobytes) per second transfers - the thick end of 20 times faster than today's V.34 models. The new modems won't plug into the phone line, they'll hook up to the hybrid cable TV plus everything else line that's due to be run past better than a million Australian homes by then; but from your point of view, it'll be much like using an auto-everything Internet package today, only notably faster.

Now, this 64k per second is not light speed - it's a shade faster than a decent floppy drive. Integrated Services Digital Network (universally, and mercifully, abbreviated to ISDN) can offer much faster connections, but nobody's planning to piggyback it onto the fibre links. So these new turbo-modems might well be it, and might evolve into systems fast enough for proper video transfer and all that cool stuff. Not yet, though.

Immedia linked

Immedia (they want to be

Top to bottom: 1) *Thousands of movies at your fingertips.* 2) *Education on the net!* 3) *Sure beats sticking it on the fridge!*

called IMMEDIA!, but capitals in the middles of words are quite bad enough) is a "diversified entertainment company", possibly better described as a collection of PR people, which now has a site.

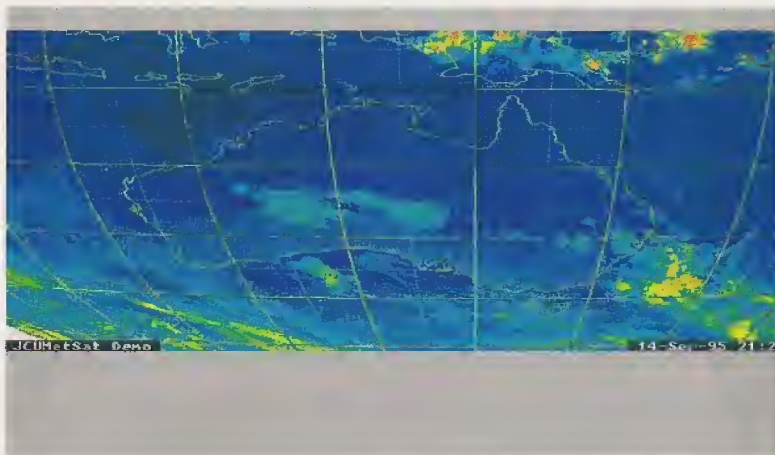
Musos may know them for their Australian Music Industry Di-

rectory, which according to the Web page has been "published every July since 1998", but which I psychically suspect to be seven years old.

They're now also doing an Australasian version, and a Sports Industry Directory. They also sell a

This page has been accessed **0575** times since 6 September 1995





Top to bottom: *Weather satellite images - a link from the CSU page*

load of music industry books by mail order, and run a dedicated music industry employment service, and do conferences and seminars, and generally rake in the dough.

Why am I giving these already quite successful people a free plug? Because their site should be on the hotlist of any Net-connected commercially inclined musicians out there.

From it you can easily access the Australian and Australasian Music Industry Directories (and the Australian Sports Industry Directory), with every musical contact you could wish, view plenty of info on the Music Staff Personnel Agency, and of course see plenty of propaganda about Immedia's clients and functions.

Location: <http://www.immedia.com.au/>

Online movies

It struck me the other day that I haven't actually mentioned in these pages the online version of the Internet Movie Database (IMDB), one of the gems of the Web and accessible from many places. It's had a flurry of attention in the media so I shan't harp on about it, but, in essence, it lets you look up a whole load of information on movies (and some TV shows), searching in various categories.

There are a lot of commercial movie reviews, but IMDB has been assembled by unpaid movie-freaks and as such is a bit ragged in places - but the continuing critical attention of many thousands of other unpaid movie-freaks keeps it remarkably accurate.

When I checked, the database had some 55237 titles in the database, and a total of 96059 actors, 53058 actresses, 11988 directors, 17108 writers, 5430 composers, 4672 cinematographers, 2456 costume designers, 2467 production designers, 4375 editors and 9890 biographical records. Get the idea?

Location: <http://www.msstate.edu/Movies/welcome.html>

Kids online

The Oz Kidz Internaut Cyber Centre intends to provide a Net-linked publishing site for the creative outpourings of primary and secondary school students, with feedback from all over the planet. Planned are collaborative projects for students in local, national and international schools, links to educational resources for students and teachers and general Internet education for all.

Unlike many recently started sites with grandiose plans, this one actually has quite a lot of content right now. Info on books for kids

and young adults, their writings and a few art works, various information on Australia, career information, and lots of links to schools on the net. Many of these only have email addresses, but some of them, like my old school James Ruse (on <http://www2.hawkesbury.uws.edu.au/JRAHS/>) have proper Web pages with a fair few items of interest and links to other sites, on top of the usual tedious newsletter stuff. The Ruse site's pretty sterile - it's obvious that the students don't have much opportunity to add their own stamp to it - but the mere existence of such sites bodes well for the future.

Still on things educational, Charles Sturt University has a page at <http://www.csu.edu.au/> that's worth a look, with various information on that and other unis and colleges. There's also a link to the WWW Virtual Library, a service which could become pretty cool if it had about 20 times as many books but is far from useless right now, a hookup to the high-powered Harvest Internet searcher and more.

Location: <http://gil.ipswichcity.qld.gov.au/ozkidz>

Big Net show

Sydney's Darling Harbour Exhibition Centre will house the first Information Superhighway Access Exhibition from the 16th to the 18th of November. Aiming to provide for everyone from big businesses who want to know about commercial opportunities on the net and secure funds transfer to or-



dinary people who want to know how to get onto the net, the exhibition will cover multimedia, Internet, tele and videoconferencing, data communications, Pay TV, interactive TV and electronic messaging. As well as various exhibitors, there will be 30 computers set up for free Net-browsing (once you've paid the \$10 admission fee). For more information call Professional Marketing Services on (02) 368 1100, or check out their site.

Location: <http://www.next.com.au/pms/>

DIY Internet

Net novices in Melbourne can now view a free demo showing them how to get connected (with a PC) on any weekday from 2 to 3PM.

This altruistic service is being provided at the Rod Irving Electronics (RIE) store at 48 A'Beckett St, Melbourne City, and you can also access the Internet using their system for \$5 a half hour. Contact RIE on (03) 9663 6151 for more information.

White and Yellow pages on Internet

Telstra have launched electronic version of the white and yellow pages on the World Wide Web. The national listings covering 55 directories include residential, business and government numbers. You can search with as little as a surname, or include initial, street and suburb. Results are reasonably quick, and during busy periods can be more convenient than waiting for the dial up voice equivalent. For now it's free, but it sounds like they'll be charging down the track.

Find it at Www.whitepages.com.au

Kaboom!

A bit of fun to finish with.

You've read the newspaper pieces about how the Internet is going to turn us all into mad longhaired bombtossing anarchists - well, the place to go if you want to find some corroborating evidence is <http://anarchy-online.com/>, wherein, after the usual don't blow yourself up disclaimer (oh yes - don't blow yourself up. Nearly forgot that), you'll find links to umpteen fascinating places, purely for entertainment purposes of course.

Personally, I avoid anything whose instructions contain the phrase "now pour in the gunpowder and hammer the end shut", but if being called Stumpy seems a good idea to you, you're sure to find some material to your tastes.

It's by no means all bombs and governmental overthrow. While you'll find quite a lot of people pointed to from here who have

rather distinctive views on how the world is ordered (though they're not necessarily serious), there's plenty of info on avante-garde art, music, Hip Things To Do and so on.

And if you're talking off-the-wall peculiar stuff, the king of the genre is Justin Hall. His Links from the Underground are guaranteed to impress your friends and horrify your maiden aunt. The usual disclaimers apply here, too; poke about and like as not you'll find some people talking about illegal substances or showing pictures of their naked girlfriends. But everything, as always, is pretty obviously labelled. You won't be offended without trying to be.

Location: <http://www.links.net/>



Let your fingers do the walking™

Welcome to the Australian
Yellow Pages™ on the Internet



The X Factor

in MIDI sequencing

By Phil Rigger

▶ A long time ago in the land of vapourware, Amiga music-heads had little to cheer about. So much was promised. The breakthrough had come - here we had a machine that could do many things and do them all at the same time, so plainly music sequencing was going to have a new home. Well, they say reality bites and the music faithful were bitten hard, because they waited in vain. The first couple of

offerings were messy, toy-like packages that failed to realise the potential of the Amiga. After a couple of years, MusicX made its entrance, preceding Bars and Pipes by at least a year, and leaps and bounds ahead of anything then available.

MusicX had many great features. It was a complete sequencer/librarian/editor with an elegant front end. It felt solid and

was reliable with little guru intervention, and best of all gave the impression that professionalism had at last arrived on the Amiga doorstep.

Well, the good news is that MusicX was all of these things, and still is. It never really disappeared. It has found a new home with software publishing group The Software Business Limited, based in London, and has been upgraded with several new features including a notation system called, not surprisingly, NotatorX.

NotatorX is not a module that runs inside MusicX, but a separate program that can be run alone or simultaneously. You can load in MusicX files or load Midi1 MIDI

● ● ● ● ● ● ● ●
Left: Sequencer page

Seq	Mem	Bars	Channels	OST	Time	Sequence Name	Out	<<	>>
001	102	1	1	---	---	Rel Metronome Track	INT	0002	
002	132	0	2,4,5,10	---	---	Rel MT-32 Program Changes	Ex1	00000	
003	-	-	-	-	-	*			
004	7612	61	10	---	---	Rel Human Drums (source)	Ex1	Off	
005	7602	87	2	---	---	Rel Human Bass (source)	Ex1	Off	
006	522	2	10	C--	---	Rel Drum Pattern (Cut & Pasted)	Ex1	00000	
007	852	8	2	C--	---	Rel Bass Pattern	Ex1	00000	
008	952	8	4	C--	---	Rel Clav pattern	Ex1	00000	
009	822	28	5	---	---	Rel Sakuhachi improv	Ex1	00000	

Top: Filter page
 Middle: Sound editor
 librarian
 Bottom: Internal samples
 page

files from other sources. While running both programs you can import MusicX files directly across, without saving first.

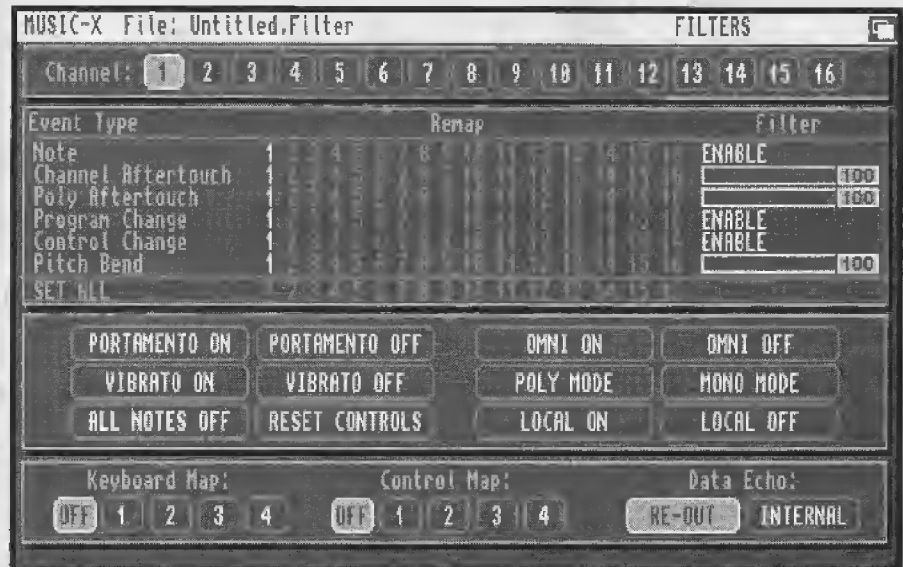
MusicX is still essentially the same program it was when first released - a testimony to some good product design - but there have been improvements made and modules added to the event edit page.

The original MusicX had only Quantize, Scale Velocity and Scale Aftertouch. The new module list now includes QuantizerII, ARexx Edit, Velocity Flattener, Scatter, Swing, Deflam and Print Events, which will print out your event list. QuantizerII is an improvement over the original, with additional control over quantization duration and offset, for moving events forward or backward in time. This is particularly useful with synth sounds that have a slow attack; with this function you can pull these parts back into line.

Velocity Flattener pretty much speaks for itself, but is a useful addition. It probably should have been there as an original feature. ARexx Edit provides compatibility, but instead of being just an interface it provides a number of really useful macros, suffixed with .mxe.

Eartrainer.mxe is a macro that fills a sequence with random melodies designed to let you practice ear training without a human partner. It puts up a requester with

continued on page 50...



Amadeus

• Suite 1, 534 Old Northern Rd, Round Corner NSW 2158

New Amigas

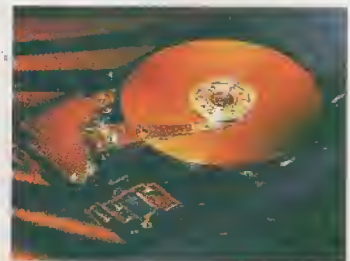
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AMIGA



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Money Matters \$79 Turbo Calc 3.5 . . . \$149

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WW 3.1 Companion \$49

Wordworth 4SE is a cut down version of WW3.1.
An update to 3.1 is scheduled for early in the new year.

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CD Write	\$99
CD Boot	\$69
Aminet 7	\$35
Aminet 8 Due mid October ..	\$35
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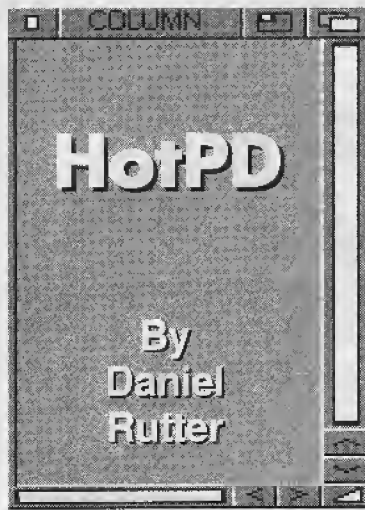
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8n1.device ***

I mentioned this one just last month, so I'll be brief - it's had a little bugfix, to stop programs that repeatedly abort I/O operations making the device trash RAM. It's still tiny, so it's on the companion disks.

Oddly, this new version, v37.13, has a lower version number than the one I last mentioned, v37.9. The date in the version string is later, though, so either the author screwed up the version number (not likely) or the previous version had been hacked by some loser to make it look like a hOt NeW uPIOaD, D000DZ. It didn't do anything bad, though (beyond

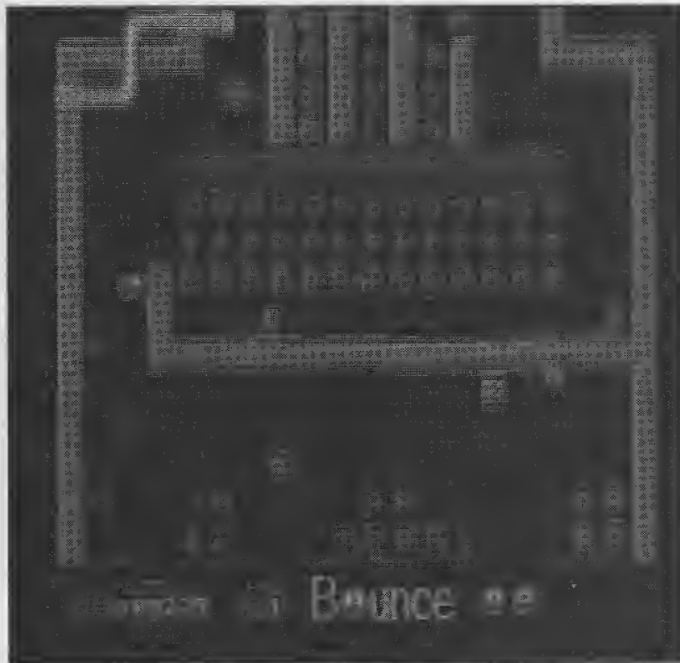
that memory-trashing bug), so I wouldn't worry if you're using it.

Ultimatum *

Anyone out there played Cyberbled in the arcades? Twin joystick two player tank game, guns and missiles, vector graphic? I did, and I liked it, and Ultimatum looked like the same idea for the Amiga, so I checked it out.

Ultimatum uses joystick (bad) or mouse (good) control, and there's no two player mode, just computer opponents. The arena's not very complex and there's only one design, and the AMOS 3D graphics are blocky and basic. There's no sideways strafing movement and you can't reverse, but there's a gun, guided missiles, turbo and various other specials, so it's far from a dead loss.

You don't actually need an AGA machine to run Ultimatum, but you do need 2Mb of chip RAM - so most ECS machines are out of the picture. A fast processor helps, too; at maximum speed, the game wasn't silky smooth on a 40MHz 68040.



Program complexity

- ☆ Rachel
- ☆☆ Maddy
- ☆☆☆ Vanessa
- ☆☆☆☆ Cathy

Ultimatum is elephantine, so I've put it on a disk of its own. Ask for Ultimatum as well when you order your Hot PD companion disk set, as of course you are just about to do.

FlashFind **

One utility I use frequently is Scan. It's a program that searches a mound of text files for a string, basically; there are a million and one options, but most of the time I just use it to find a word or words in my 200Mb of assorted text. It can search the whole lot for a ten character string in about six minutes on my 40MHz 030 machine, which is pretty darn impressive.

FlashFind's a simpler program, still operated from the shell but with fewer knobs on and a claim to be faster than anything else. So I gave it a go.

Flashfind was indeed faster on a small directory (by a few percent...), but on the full 200Mb it piked out after producing about 8k of output. This made it MUCH faster than Scan, of course, but since it didn't actually finish I don't think that counts. It wasn't a stack problem (I cranked the stack to a megabyte to see), and FlashFind thought there was an un-



Left: Bounce, the platform game for people with rubber balls



Top: *The Cybersled-ish rotation show off bit at the beginning of Ultimatum...*

Below: *...pretty basic graphics, though.*



openable file in there - but there wasn't. It's on the companion disks, anyway; check it out on your machine.

Bounce *

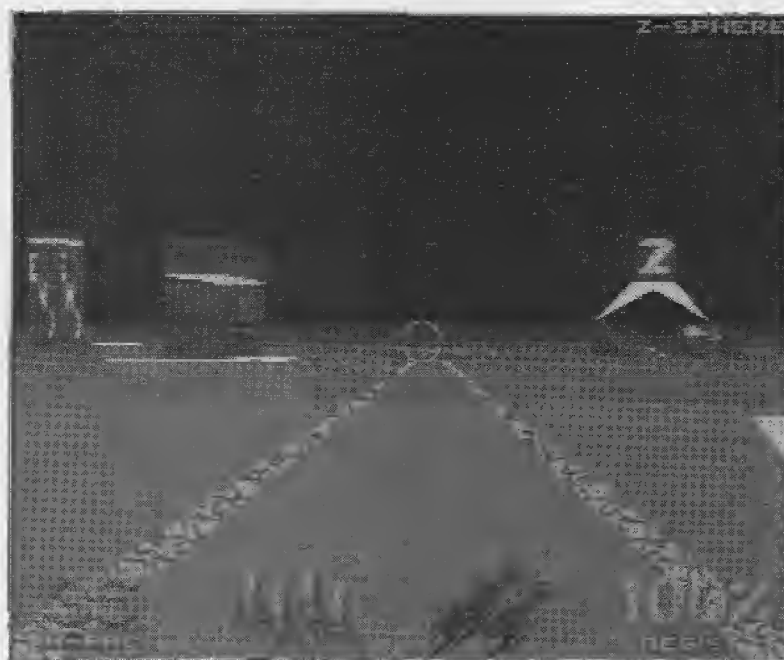
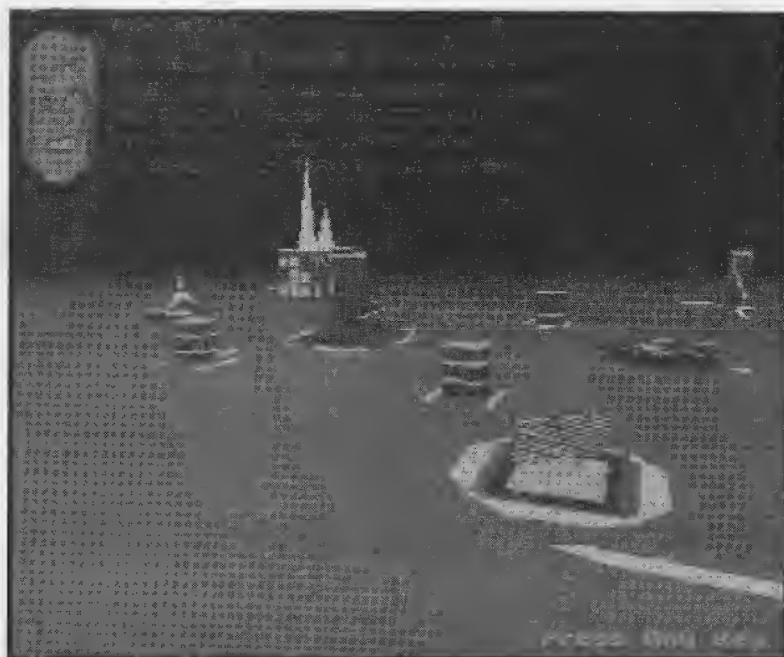
Platform game. Written in AMOS. You're a little round bouncy thing. You bounce lower when you pull the stick down, higher when you push it up. Gems. Baddies. Springboards. Various levels. Not bad at all. On companion disks.

ParachuteJoust *

This game's so militantly stupid the world has to know about it. Two nutters jump out of a plane far, far above the ground. They each, reasonably enough, would prefer to end their lives peacefully in bed quite a while from now, and not as a red puddle at the bottom of a man-shaped hole in a field somewhere. This would be quite easy for them if they each had a parachute.

Unfortunately, they have one between them.

As the feet tick away, you and a computer opponent or you and a friend pummel the snot out of each other and the parachute changes hands, typically, several times. Whoever's holding it when the magic opening altitude passes wins. Whoever isn't, doesn't. It's not a particularly well-made game (it crashed on AGA, by the way...), but the concept's amusing.

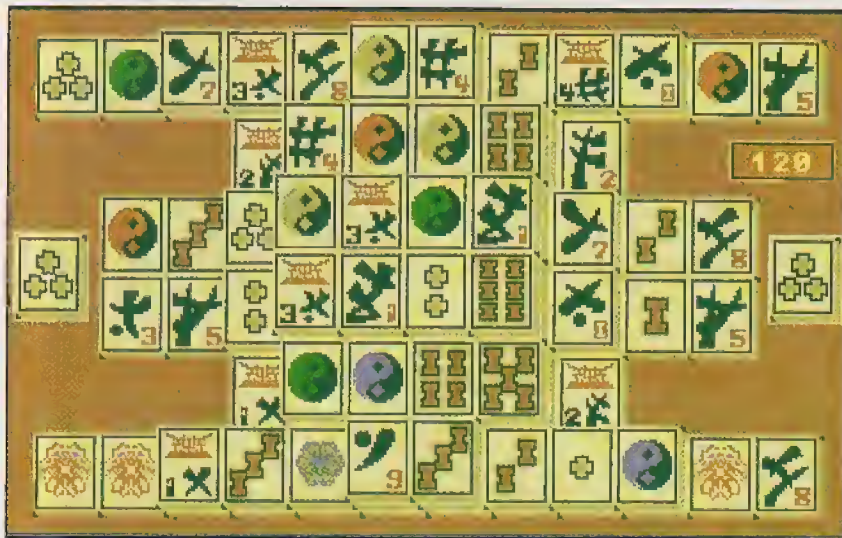


China Challenge 3 *

China Challenge is a simple Shanghai clone - a pile of Mah-jong tiles, from which you match pairs to make them vanish. Unlike the latest Shanghai version on IBM compatibles (a multimedia extravaganza for Windows 95), this game is pretty much devoid of

frills, and none the worse for it. If you want a Shanghai game, this one's fine.

Oddly, though, this version comes with three incarnations, compiled in Assembler, C and C++ and all including source. They're precisely the same from a player's point of view, so on the



Left: *China Challenge 3*; a perfectly good Shanghai clone



companion disks I've archived the two C versions; if you're an interested coder, you can extract them yourself.

ABackup **

It took ages for this update to come along, but it looks to be worth it. ABackup is a full-featured shareware (\$US20) Workbench 2 and higher hard disk backup program, which supports just about everything.

ABackup has all the features you expect. Full and selective backup and restores, with file selection individually or by-name, date or protection bits. You can backup to floppies, if you really want to, but you can also backup to tape, files or whole partitions, like removable drive cartridges - but whatever you're backing up had better be smaller than the cartridge, because ABackup doesn't seem to support changing carts.

There's data compression using the XPK compression libraries (automatically not trying to compress files that have already been compressed), data encryption for the paranoids, and you can set the archive bit for everything you backup for easy incremental backups.

You can restore to anywhere, with or without the original, and you can overwrite or skip existing files. You can backup non-AmigaDOS partitions, and ABackup can generate report files for all operations.

You can use high density floppies along with doubles - so if, like many people, you've got a double density internal and a high density external drive, you can use 'em both in one alternating backup - just keep the blanks in the right piles. You can also use DiskSpare-Device for extra floppy capacity, and ABackup understands MultiUserFileSystem as well, so people running multi-user Amigas will find their access rights and owner information accurately restored.

You can run ABackup in the standard Intuition interface mode, or set it up for automatic operation from project icons replete with tooltypes that tell the program what to do and where. You can also run the program from the Shell, either interactively like a humble archiver or automatically for easy scheduled backups.

One annoying thing about ABackup is that with the standard interface, it uses a great big window while it's backing up.

scrolling a big list of files copied. This is fine if you've got a 24 bit graphics card using a Workbench emulation, but if you're running a humble ECS or even AGA machine, the notoriously slow Amiga text scrolling will greatly slow the backup down. This is a shame, because ABackup uses asynchronous writing and hence has the ability to be very fast. Mind you, if you've got a 68000 drive machine and you're doing a compressed backup, text scrolling will be the least of your problems.

You can get around the scrolling slowdown by running ABackup from the Shell, but this kills much of the program's elegance. Oh well.

The acid test of a backup program, of course, is whether it's got any personality traits that'll cause it to throw your data away under any circumstances whatever. Write-Only Memory backup programs have caused much hair-tearing in the computer community.

I haven't tested ABackup enough to unconditionally guarantee it, but it seems pretty bullet-proof. It's certainly not a 1.0 version.

DailyBackup 2.1 **

Still in the backup genre, DailyBackup is a much simpler program. Its purpose in life is to scan given directories (or single files in them) to see what's new, and automatically back them up in one of several ways - you can do full backups too, if you like.

DailyBackup can be run from

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the Shell too, so you can schedule backups easily enough. It's not fancy, but it works - you can pick any device for the destination, and use any shell compressor to squeeze the data by telling DailyBackup the command line. You need MagicUserInterface (MUI), and hence of course Workbench 2 or better, to use DailyBackup.

DailyBackup is Freeware, and on the companion disks.

EasyPatch ***

Another MUI program, EasyPatch is one of those dubious utilities whose purpose is to nuke remember-to-register requesters in shareware programs - but it's got other uses.

Essentially, this is a commodity that can be told to kill all requesters with given text in the titles or gadgets. So aside from preventing you from being annoyed by requesters from the authors of shareware programs, EasyPatch can zap any other sort of requester as well. If something keeps popping up nonsense error boxes that you have to be there to click away, you can selectively target those requesters. Useful.

Icon Deluxe **

Well, whaddaya know. An icon editor. And not a bad one, either. All the basic drawing tools (shapes with and without fill, text, cut and paste, zoom, colour swapping, keyboard shortcuts), various colour depths, and icon loading from menu, extended selection, command line or by dragging them into the window. You can make icons bigger than Commodore's already somewhat elephantine maximum size recommendation of 80x40 pixels (though a requester asks you if you really want to), and you can modify icon type and tooltypes as well. Unusually, Icon Deluxe doesn't work under OS3 and higher, only 2.x. It's shareware.

Call
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to order your
HotPD 28!

Losers of the Month

Computers, as a wise man once said, allow you to make mistakes thousands of times faster than you could unaided. And if you happen to be a bit of a turkey, as it were, computers allow you to let the world know about your advanced state of wallytude in a matter of hours. Isn't technology wonderful.

There's plenty of daft goings on amongst the chaps who inhabit dA ScEnE, D000dZ, and thanks to their general youth and egotism most of it gets pretty silly pretty quickly. These guys, generally, are good at making games and demos and, often, cracking commercial software, not social interaction. But every now and then someone distinguishes themselves with an act sufficiently boneheaded that I feel it's worth a wider audience.

The latest in the long line of people who'd be better off with a nice little abacus were a group (apparently comprising approximately one person...) who called themselves Nocturnal Knowledge (they may think they're still in existence, but I think the past tense is perfectly appropriate). While many people have produced thoroughly dud public domain products, those crazy kids at NK produce very very bad things, make them shareware, and then defend them to the hilt when others point out that they are, in fact, very very bad things.

Example? Glad you asked. How about four disks of pictures, each containing 30-odd coloured boxes. The coloured boxes (4096

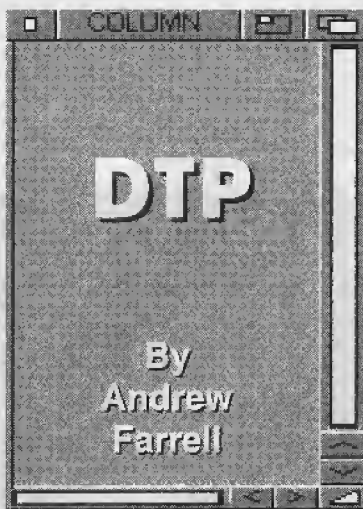
in total, the full ECS colour palette) are meant to make it easier for you to pick colours for your paint program, or some such madness; the fact that paint programs in fact come with palette requesters has apparently escaped the creator of the pack. And this is the registered version, which costs \$15 (and contains DiskMaster, which the creator does not have a license to include); the unregistered one's a one disk sampler. Uh huh. Oh, did I mention that the disk contains an archive in an archive in an archive? The creator was under the impression that this makes archives even smaller.

NK have done another disk, again containing Russian doll archives that eventually extract into instrument samples, more of which you can get by registering for \$10 a disk (or only \$40 for 5!). Or even more of which you can get by calling a bulletin board, for free. And there's a disk with poor MED modules and worse pictures, as well. I could go on - there's a highly abusive Amigaguide file doing the rounds that does, and gives name and address details - but I think this poor loser's had enough. Gee, a spotty schoolboy can get taught the hard way out there on the bulletin boards.

Consume!

The first 1000 people to order Hotpd28 a and b, the two disk set that accompanies this article and contains everything mentioned in it except Ultimatum and the crud from Nocturnal Knowledge, will receive it for the knockdown price of \$9.50 including postage. Every subsequent batch of 1000 callers on 1800 252 897 will - and here's the really good part - get THE SAME GREAT DEAL! Hey now, it doesn't get better than that! Ring now!

□



A few tips about scanning

▶ Getting images into your Amiga is no trick in itself. However, getting them in at the right resolution and number of colour can seem like guess work. How much detail do you need for a picture to turn out the way you want? How many colours are required? How do the dots per inch settings on your scanning software relate to the density to print, longer to colour separate, longer to load, take up more disk space and take longer to scan. A few minutes spent working out the correct resolution will save a lot of time later on.

To make things simple, there is a single formula which we follow to ensure things turn out right without creating a monster sized image for printing, or worse still colour separation. This formula can be worked different ways. When scanning the calculation is:-

$$1.2 \times \text{screen ruling} \times \text{finished/original}$$

The screen ruling depends on how your final output will be printed. In this magazine, colour pages are printed at 133 lines per inch, or around 120 lines per inch in the monochrome sections. These lines actually contain dots of varying colours and sizes - this pattern is called a half tone. The dots per inch resolution of the printer which creates these patterns is extremely high - around 2400 dpi. But that is not the resolution we need to scan at.

Following the above formula, a typical colour photograph being reproduced 1:1 would be scanned at 1.2 x 133 x 1/1 dpi - which is

roughly 150 dpi. Erring slightly over this is a good idea. Let's say 200dpi. That's all you need. However, if the scan is of a piece of software, the final picture of which is 1/4 the size of the original, the formula would be:-

$$1.2 \times 133 \times 1/4$$

Following our strategy of allowing a bit extra, that would give us around 50 dpi. So you see, you don't need super high resolution to get good results. Colour correction and the right output settings on your software are just as important, but following this formula is essential if you want to avoid the common mistake we see of images many megabytes in size being used for tiny pictures. They take longer to print, longer to colour separate, longer to load, take up more disk space and take longer to scan. A few minutes spent working out the correct resolution will save a lot of time later on.

Where you do need a high resolution scanner is for working with slides or transparencies. Because these are almost always enlargements, you'll need 600dpi or several times more. The slide formula normally looks like this:-

$$1.2 \times 133 \times 4/1 \text{ or}$$

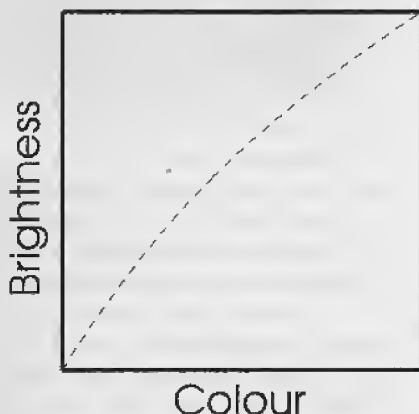
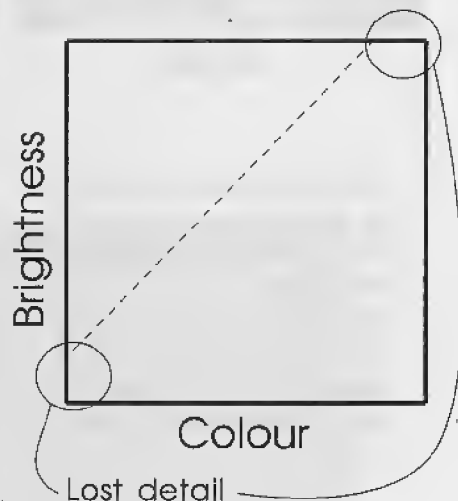
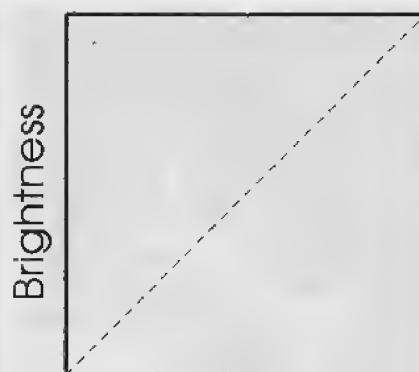
$$1.2 \times 133 \times 8/1$$



Top: Dotted line indicates level of brightness for each colour level.

Middle: Simply increasing brightness destroys detail in very dark and very light areas.

Bottom: Gamma correction boosts mid-range without losing detail.





24-bit



8-bit



4-bit

Left: RGB scan at 344 x 429 in 16.7 million colours (or 256 shades of red, green and blue).

Middle: Same scan - but only 256 colours

Right: 16 colours with dithering - if you're pushed for memory!



In this case, a 1200 or 2400 dpi resolution is not a waste of detail. Be careful though, some scanners do not have a true optical resolution high enough to cope with these sizes. In fact they simply interpolate between the result of the true resolution and what you're after. On certain images, the results are acceptable, however they're not up to scratch for images containing large areas of similar tones.

If you're really pushed for space, it's amazing how the dithering effects available in programs like Art Department can make up for lack of resolution or lack of colour.

How much colour?

The human eye finds 256 levels of colour is enough to make the individual steps from one tone to the next imperceptible. So, for colour print work you need eight levels of cyan, magenta, yellow and black (CYMK).

Unfortunately there is no program on the Amiga to do this, so we work with eight levels of red, green and blue - and then programs like Professional Page convert these images to the colours used in publishing.

For black and white photographs you need 256 shades of grey - which can be held in an 8-bit image. The trouble is, Professional Page 4.1 doesn't like working with 8-bit IFF images, however it's happy with a GIF format file.

So, if you need black and white photos, be sure to reduce them to 8-bit and save as GIF for professional results. Most images will also need to be gamma correct and brightened to compensate for Professional Page's separation algorithm deficiencies.

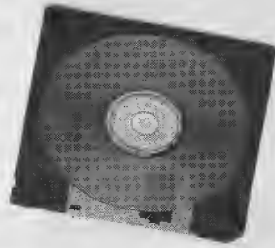
As a rule, all 24-bit images must be gamma corrected in Art Department at least 10%, with some increase in the brightness setting also desirable. Gamma correction is the preferred process because rather than increasing all the colour levels, effectively wiping out detail in the darkest and lightest parts of the images, gamma correction only punches up the mid-range of colour intensities.

Working backwards

What if you already have an image and you need to know how big you can make it before it will have a pixelised look? Simple, we know that a 1:1 reproduction requires a scan that is 200 dpi. So, for each 200 dots of horizontal resolution, you can safely cover one inch. An image that's 600 x 480 could be three inches wide without looking pixelised (the effect you get when the individual dots start to create a pattern that is discernible apart from the image itself).



Writable CDs \$100!



By Daniel Rutter

► CD-ROM stands for Compact Disc Read Only Memory, and as the name suggests, you can't write to a CD-ROM. If you buy a writable CD drive - a Compact Disc Write Once Read Many or CD-WORM drive, you can write to special CDs and end up with perfectly normal, though greenish, CD-ROMs that can be read by any CD drive. But to do this you need to spend thousands of dollars on the drive and \$30 or more per disc.

But this doesn't mean you can't make it look as though you're writing to a CD.

CD-Write is a package from those ingenious and prolific chaps at Schatztruhe in Germany, and it uses a simple concept to allow "virtual" CD writing.

Any "changes" you make to a CD-ROM via CD-Write are actually made via patch files on your hard disk, whose size varies depending on what you do. If you just shuffle files about, the patch files will be very small. If you copy a load of stuff to the disk, the patch files will be big. Delete the patch files for a given disc and all of your "changes" will be undone.

Installation

Installing CD-Write is very simple. It uses the standard Commodore installer, of course, and

you'd have to try pretty hard to get it wrong. You can call the writable CD device whatever you like, and put the patch files wherever you want, but that's about the limit of CD-Write's configurability.

CD-Write sets itself up on top of your regular CD filesystem, and what you see on Workbench is the original CD-ROM icon, and another one with CDW- in front of the name which is the "writable" version. The original version stays unchanged at all times, the writable one changes as you modify it.

What's the use?

There are plenty of applications for CD-Write. If you're running a BBS, you can easily "delete" files you don't want to be accessible from your online CDs, or update the ones that're there. You can shuffle poorly organised discs about. You can patch programs on a CD - for example, you could use the mighty Internet Movie Database that lives on Meeting Pearls II, with a load of the weekly updates, without installing the whole 28Mb thing.

By the way, CD-Write comes with a set of patches for Meeting Pearls II; it's just tweaks, but it shows that you can easily give your patches to someone else with the same CD.

Problems

When I installed CD-Write, though, I struck a snag. The installation, even at Expert level, was a doddle, and there's not much to it - a filesystem, a DOSDriver or Mountlist entry, a couple of little utilities. But when I mounted the new writable CD, what I got was a clone of my boot drive, which had been twiddled by the filesystem in the same way - I could change it without the changes affecting the genuine article.

But this was not what I wanted. I wanted to patch the CD-ROM.

After a bit of mucking about and an entirely successful install on another machine, I determined the bug in CD-Write. It doesn't like numeric device names.

My partitions, Bernoulli and CD-ROM are named 1: through 6:. If I renamed my CD to something conventional like CD0 and updated the DOSDriver accordingly, CD-Write worked. But if I called it 6, 7, 66 or anything else purely numeric, CD-Write did its thing with the boot drive. C'est la vie.

Hmm!

Perhaps there could be some application for this effect - using CD-Write to mirror a volume that's already writable. I'm not sure what use it'd be, but it'd let two or more people, on a network for example, have their own views of one genuine device, which each could modify without stomping the other user's stuff. Danged if I know why, but I'm sure some deviant'll find a use for it.

Overall

For \$99, this is a winner. Genuinely useful, easy to use, no real bugs. You'll know if you need it. *Contact Amadeus on (02) 651 1711 for more information.*

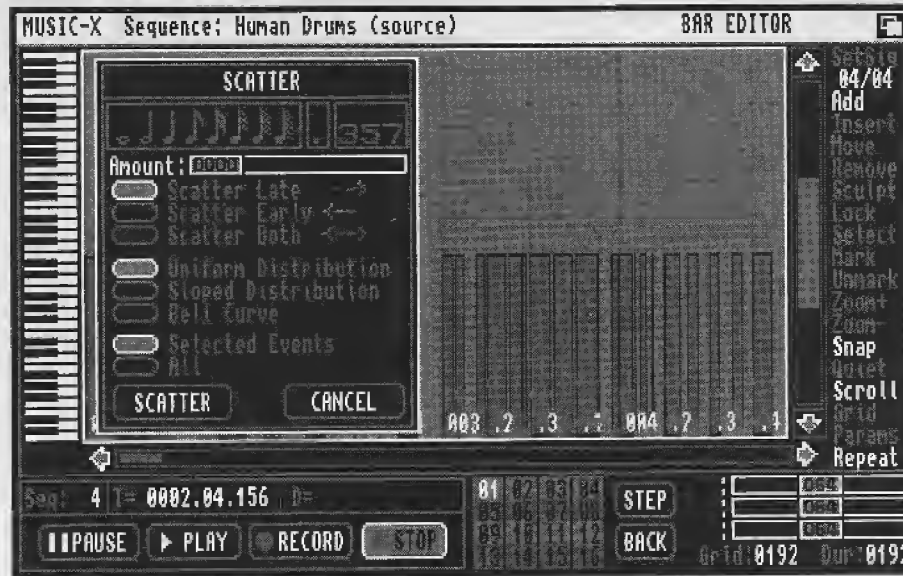
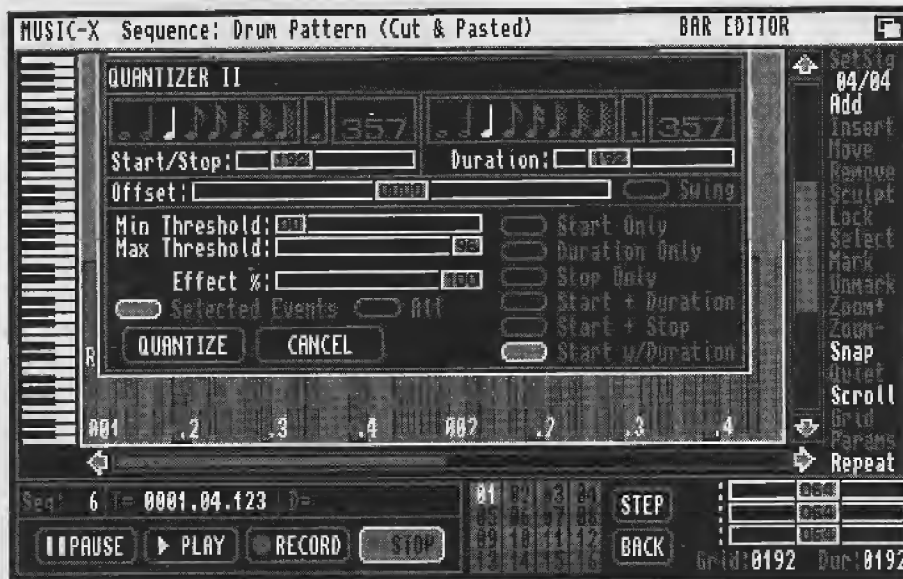
□



Top: New modules added to edit page

Middle: Quantizer II module

Bottom: Scatter module



various generation parameters you can tweak. Very interesting, though not something you're likely to use constantly.

CopyTranspose.mxe allows you to copy notes to a different channel or the same channel. You can transpose the notes as they are copied. The manual mentions that it could be handy for building a horn section out of a melody. Trimende.mxe deletes any events past the end line in Event Edit. Handy for cleaning up tracks if you've been using this area as a scratchpad. InterpolateSlope.mxe generates Control Change, Pitch Bend or Aftertouch events. This proved to be great in doing things like smoothing out "lumpy" pitch bends or uneven aftertouch performances.

Timestretcher.mxe is a little beauty. You can apply it to a sequence to expand or compress without changing the tempo, by moving the start times of all selected events in a marked section proportionately. An interesting use for this is the reintroduction of a theme later in your piece of music, but played at half or double the original speed, without, as mentioned before, having to change the song's tempo. I tried this a number of different ways and came up with some very interesting, sometimes quirky results.

The Scatter module randomly offsets both the start and stop times of events, moving them slightly.



This can be used to soften up a groove and make something originally quantized less rigid and mechanical in feel. You can make fine adjustments, as small as one clock pulse. Swing provides a similar type of de-quantize facility, although Swing allows you to make adjustments to specific notes across 16 beats, whereas Scatter is set up to look at all events in that area. You can use both for a multitude of combinations.

Deflam not only allows you to delete note doubles (perhaps due to merging tracks), but can also analyse whether these notes are doubles or grace notes. You have control over the way you filter out unintentional double notes, using the gap between two notes to decide whether you delete them. Again, some interesting uses here. Hey, lots of programs have doubling delete functions, but MusicX gives you a lot of flexibility.

Each of the modules mentioned has sliders for sensitivity or clock pulse size, which makes fine adjustment possible across the board. Experimentation and the combining of different modules can yield interesting results. The implementation here is simple yet effective.

MusicX also allows you to use internal Amiga sounds, with the ability to hold up to 64 in memory. Some people will find this appealing, as it's a standard facility that could be quite useful, not to mention fun. Of course if you're strapped for cash and can't afford a pro quality sampler, you can use a cheap 8 bit unit on the Amiga and still have a powerful aid to composition.

NotatorX

MusicX's bundled notation package allows you to view your compositions as music notation, instead of alphanumeric or block style displays. You can print out your scores on any compatible

printer, and I might say the quality isn't bad at all. Of course, there are a number of notation systems available today that provide top quality editing and printing, but almost without exception they are expensive and often frustratingly complex.

NotatorX is extremely good value, with a reasonably intuitive interface. You can change both the screen resolution and the viewing size, and you need an Amiga system that can display flicker-free high res video to view a whole page at once.

NotatorX's controls are many and varied. Inputting notes and changing length is achieved with a quite simple combination of mouse clicks and pull down menus, but notation packages still that require a bit of study and even more patience.

I was surprised at how long NotatorX took to transcribe a song bounced to it via the hotlink from MusicX. Sure, there's a bit of number crunching involved, but I'm sure this could be accelerated. Overall, though, I found NotatorX well designed and reasonably intuitive. This is a much needed addi-

tion to MusicX, and helps to complete a very solid package.

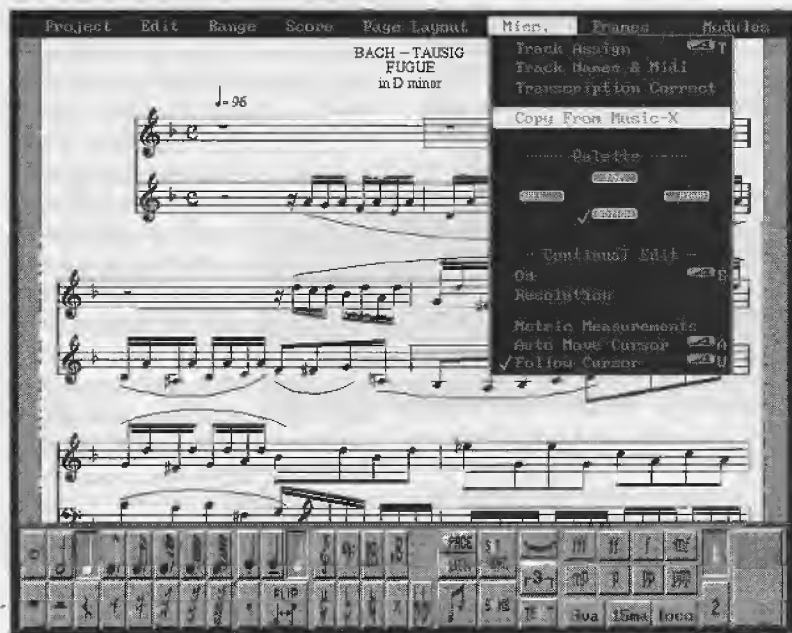
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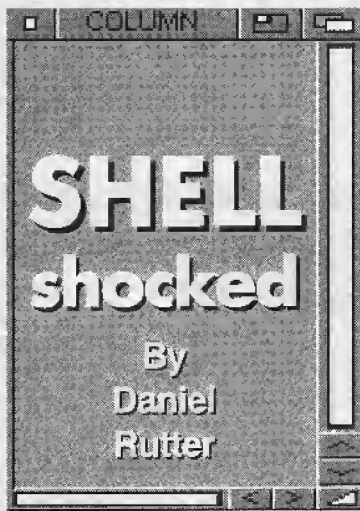
One of the most pleasing aspects of the new MusicX/NotatorX package is its price - \$199. This is very reasonable for a sequencer of this quality. If my memory serves me correctly, it retailed for either \$299 or \$399 four or five years ago. To keep it at this price level with the new inclusions is great.

Sequencer style and design is a subjective topic, but MusicX/NotatorX holds up very well as a professional feeling sequencer/notation package, and gets the big thumbs up from me. I hope the publisher actively looks at updates along the way, as this is a system that has a lot to offer.

Available from Amadeus. Call (02) 651 1711 for more info.

Below: NotatorX allows direct transfer of files to and from MusicX





Getting the corkscrew out of the bottle

► Archives are files within files; a collection of files stuck together and compressed, with information on how to turn them back into the originals. Archives are good because they take up less space, can be transmitted down modem links faster than the originals and put several related files in one place, and they are bad because an archive you don't have an unarchiver for is useless to you.

The classic archiver nightmare, which I like to call the corkscrew in the bottle problem, is when you've got every archiver under the sun but every one of them's been compressed with one of the other ones. Lha.zip, zip.arj, arj.zoo, zoo.arc, arc.pak, pak.lha.

It actually shouldn't ever happen, because archivers are classically presented in self-extracting format; they've been archived, and then a special header's been put on the archive which makes it a bit bigger but also allows it to run as a program and uncompress itself.

Now that's all very well, but it doesn't help you if you can't actually find a version of Archiver X that runs on your beloved Amiga. Fortunately, you probably can - you just need to know where to look.

If you download an Amiga file from an Amiga bulletin board, nine and three quarter times out of ten you'll find yourself staring at a file that ends in .lha. This indicates that

it uses lh5 compression, and it was almost certainly made by the eponymous LhA, far and away the Amiga's most popular archiver. LhA can extract it again, too; the command line to use is "lha x <archive>", to extract all of the files with their original directory structure, or "lha e <archive>" to puke them all into the current directory. There are a ton of other LhA options, which you can view page by page if you just run the program with no other parameters.

LhA's been around for ages, as has the most recent freely distributable version, 1.38. The registered version is now rather faster and more efficient than this older incarnation, but 1.38 is fully compatible. We've been promised a new and super-improved version of LhA for rather a while now by the author, Stefan Boberg, but v2 still hasn't arrived. And, as far as I'm concerned, just because Stefan had to do his compulsory military service is no excuse to slacken off. No stamina, today's programmers.

Before the invention of lh5 compression there was lh1, a slower, less efficient system whose files are denoted with the .lzh suffix. LhA can make and extract lh1 files as well, but by default it's lh5. You don't have to change anything in your command line to extract lh1 files.

LhA is, for Amigas, a pretty good choice of archiver. It gets decent compression, it extracts very fast, and it compresses quite quickly as well - this matters, because many Amigas aren't running very fast processors, by modern standards.

In the PC world, though, no such restrictions apply. An unprepossessing \$2000 chain-store multimedia PC these days comes with an 80486DX2/66 processor, which is better than five times as fast (depending on moon phase and flux residual) at raw processing tasks,

like archiving, as a stock 25MHz 68030 A3000.

With this kind of grunt at everyone's disposal, it's hardly surprising that the most popular IBM archiver, ZIP, does slightly more efficient and much more math-intensive compression than LhA. ARJ is an older PC archiver, also still popular and also not very fast, in absolute terms. LZH archives pop up occasionally in the PC world too, but they're not much more common than the antediluvian ARC and ZOO formats - which you'll probably never have to deal with.

Fortunately, both ZIP and ARJ formats are comprehensible to Amiga users. In the olden days we had to sheepishly ask IBMers to convert the files to LZH so us poor forelock-tugging Amiga users could extract them, but for quite some time now there's been Amiga versions of the popular PC programs; along with CrossDOS, you need no help from the IBM owners except, probably, putting files on 720k disks if, like most Amiga owners, you don't have a high density floppy drive.

There is no ARJ for Amiga, but you can get an UNARJ. There are a few versions out there, but the best I've found overall is an Amiga port of UNARJ 2.41. It's written in C and hence not very fast at the best of times (compared with the "real" ARJ, all of whose important routines are written in assembler), but it'll do. The command line is simple - "unarj <option> <archive>". <Option> is either e, l, t or x, for extract, list, test or extract with directory structure.

The Amiga is blessed with both ZIP and UNZIP. ZIP has the usual forest of possible options, but you can also just say "zip <archive> <file pattern>" and it'll make an archive with no fuss. "Unzip <archive>" is all you need to type to extract a zip file; UNZIP's got



rather more options than it probably needs, but -l and -t, to list and test archives, are all you're likely to need. Include them between Unzip and the archive name.

Other archivers

LZX is a newer archiver, which generally does a little better than LhA in archive size (for some reason archiver designers get really excited over a 1% efficiency gain), unless there are lots of similar files in the archive, whereupon it does them all together and makes a MUCH smaller archive. All you, J. Random User, really have to know about LZX is that it's becoming more popular, and has a basic command set the same as LhA.

The politely named StuffIt, which makes .SIT files, was the compressor that Macintosh people used before they learned about real archivers. There's no StuffIt for the Amiga, but there's a .SIT extractor, in case you should ever need it, and it uses the same command line as UnARJ except its commands are l to list, v to view and x to extract.

Where do I get all these weird and wonderful archivers, I hear you cry. Then again, I also work rather long hours and spend thousands of dollars on radio controlled cars, so I wouldn't put too much stock in anything heard by yours truly.

If, however, you really do want to get these archivers, you'll be pleased to learn that I've updated the Compressors and Archivers disk with the latest and shiniest versions of everything. All the software, one lousy floppy, \$5 including postage. You can't go wrong. Pick up some Hot PD companion disks while you're at it. And the entire Fish library. Go on. You know it makes sense.

□

Archiver Table

File suffix	Amiga Archiver?	Amiga Extractor?	Speed	Efficiency
ARC	Yes	Yes	Low	Low
ZIP	Yes	Yes	Low	High
ZOO	Yes	Yes	Low	Medium
SIT	No	Yes	Medium	Medium
LHA	Yes	Yes	High	High
LZH	Yes	Yes	Medium	High
LZX	Yes	Yes	High	High/very high
ARJ	No	Yes	Low	High

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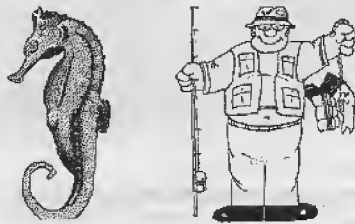
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 Disk 5. Fish, Food, Hands, Household, Toys
 Disk 6. Garden, Insects, Maps
 Disk 7. Graphics
 Disk 8. More graphics, Japanese characters
 Disk 9. Miscellaneous, Music, Nautical, Space, Travel
 Disk 10. People, Scientific/Medical
 Disk 11. Outdoors, Signs, Toons
 Disk 12. More Toons
 Disk 13. Sport, Type
 Disk 14. Transport, War

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MovieShop 2.6 Update

Digital Video Editing

By Andrew Farrell

► We checked out the VLab Motion, Toccatà and MovieShop software when it first appeared last year. Since then, MacroSystems have been very busy tweaking the software and adding features. For the last six months we've had a MovieShop system up and running here at Amiga Review's offices - and enjoyed seeing the software move from version 2.0 to version 2.6. Along the way many of our original gripes were solved and

some groovy new features added. The word is that a major upgrade is still in the works, due to arrive some time after the Draco turns up.

The latest version adds sound editing capabilities similar to what you can already do with video clips. You can now record and edit sound independently, using a separate control window with traditional jog controls.

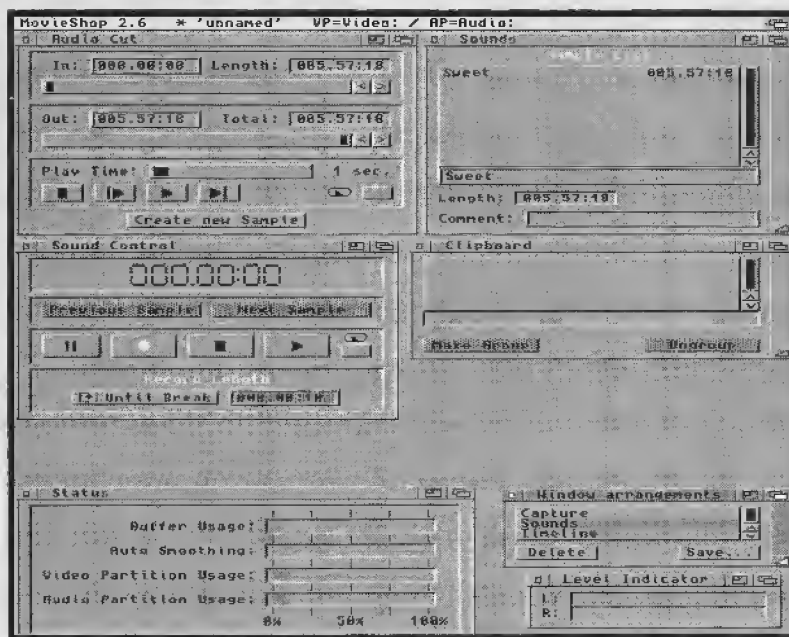
The best new feature is disk reorg, which removes redundant

video and sound from the hard drive. You see, MovieShop uses a special disk format of its own. Originally, all video and sound recorded consumed disk space even if it was deleted. So when using a drive that could hold 30 minutes of MJPEG video, you couldn't just record 30 minutes, edit it down to 10 minutes, and then record another 20. Instead, you had to be careful to only capture the video you wanted.

Now you can simply capture great slabs of footage, edit out the bits you don't want using the mark-block and cut buttons, and then do a disk reorg. Now you're ready to capture more video.

Another nifty add on is the window menu. Arrangements of windows can be saved, whereas before you had to use multiple settings for the entire system. This was a real pain if you changed a major system variable like a buffer slider in one setting, but forgot to change it in another. The window settings are now listed in a window of their own. To change, you just double click and a new configuration immediately appears.

Behind the scenes, some annoying bugs have disappeared and a few extra settings are now visible



- but the only information on these additions appears in the German help file. Let's hope an English version turns up soon!

Compressed stereo audio now works - early versions were missing a channel. The audio compression is suitable for video containing spoken voice, but it tends to break up if you feed music containing a lot of highs.

There are a few new AREXX scripts that record bits of video and compile them into effects. Once again, the interfaces are written in German - so we'll have to wait for English versions to know for sure what they're capable of. A complete collection of AREXX additions for MovieShop will be out soon - check with Sigmacom for details.

On the whole, MovieShop is shaping up as a solid program that is only limited by the hardware constraints of current Amiga architectures. The new Draco version will solve some of the bandwidth problems currently pestering some users - as will the new next version of the MJPEG chips. We'll keep you posted!

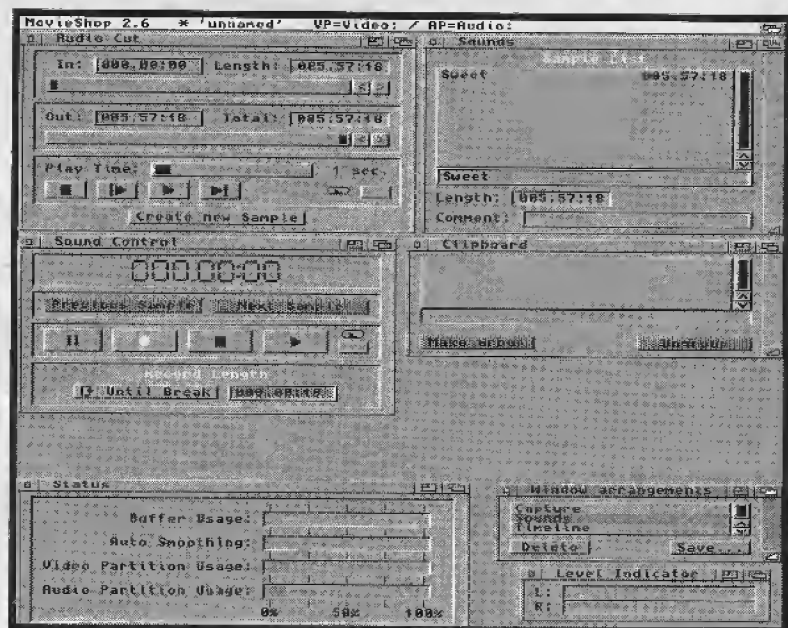
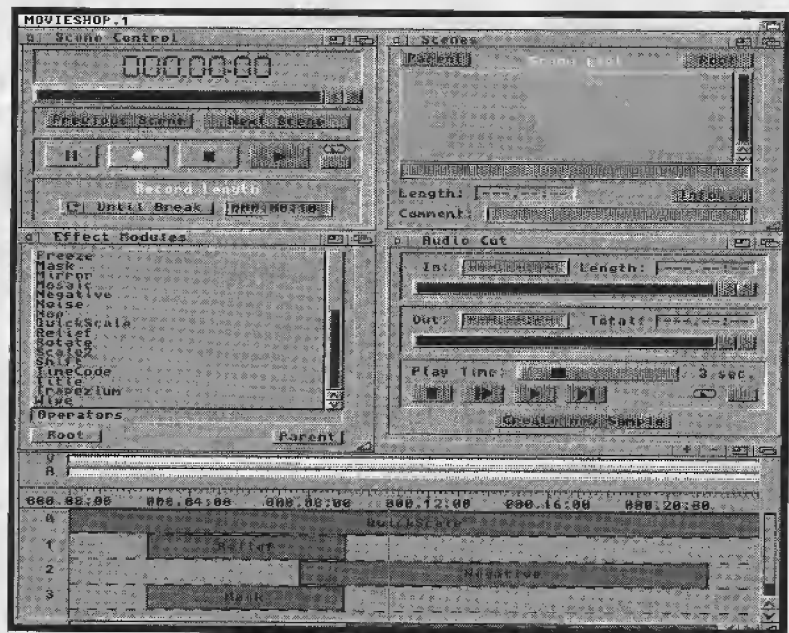
What is MovieShop?

Editing video using the Amiga is old news. However, editing video ON the Amiga is now where it's at! Using video and sound capture cards (VLab Motion and Toccata), original video can be stored onto hard disk. From there you can cut, paste, edit and add special effects, as well as montaging many layers of footage onto each other. The final composition is played directly from hard disk as a finished, edited production, which is recorded to a master tape ready for use.

MovieShop is the software that makes all this possible. Windows containing control and editing tools can be arranged on screen into whatever configuration you want for the type of editing you plan to do. Video segments are trimmed down to create clips. These are dragged onto a time line, along with music and effects, and portions are rendered to create the final video. The interface is a breeze to use, and on a fast Amiga effects render in minutes.

For corporate videos, weddings, music video clips or animation, MovieShop is an excellent solution. However, you'll need to make sure you have the right hardware and be prepared to tweak the software settings for perfect results.

For more information, talk to your local Amiga dealer or call TV Graphics on (03) 9521 2455.



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A1200, 1084S monitor, GVP '030 accelerator, 1Mb chip plus 10Mb fast RAM, 105Mb Quantum HD, switchable 1.3 + 2.0 ROM, Opalvision main-board V2.0 ROM plus software (compatible with all genlocks), original software: Imagine 3, Montage 24, Image FX, Vistapro 3, Clarissa, DPIV, all boxes and manuals. Must sell, all offers over \$2000 considered. Phone (06) 241 3579.

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A500, 1Mb chip, 1084S monitor, Audio Engineer Stereo Sampler, \$100s worth of original software, mags, manuals, all cords and power supply. Colour printer, mouse, pad, joystick and games, superb condition phone (08) 332 4340 \$550.

A500, TV modulator, 14 mags, 35 cover disks, DOpus 4.11, ImageFX, Imagine 2, AMOS, compiler, Blitz 2, DPaint III, 600 samples and 20 mods, external floppy drive, all books and manuals \$350 or straight swap for CD32 plus Communicator. Phone Adam on (06) 254 7989

Amiga 1200 system for sale. A1200, DKB Mongoose accelerator 030/50 8882/50,

4Mb Fast RAM, Ferret SCSI II controller, near new Quantum 850Mb fast SCSI II hard drive (3.5 Mb/sec), C= 1960 multisync monitor, SCSI minitower case, all cables and latest PD etc., neg. \$2000, \$1,500 w/o hard drive. Will separate. All offers welcome. Contact Andrew on BH (03) 9887 2161 AH (03) 9873 1970 or E-mail "andyc@netspace.net.au"

Amiga 500 games wanted: Formula One Grand Prix, Alien Breed, Speedball 2, Shadow of the Beast. Phone (077) 79 5758 after 5PM Wednesday, Friday or weekend.

Amiga Public Domain disks from as low as \$2.50 each. Over 7000 disks including the "Star Trek Theme Pack" 12 disks \$31. "Batman Theme Pack" 6 disks \$16. Coming soon "X-Files Theme Pack". For info on this and catalogue disk please call (067) 851 458.

Amiga Video Digitiser for sale: VID1 Amiga 12 RT for sale. Brand new in box never been used with all the cables and software needed. Brand new price sells for \$289 (best price) going for \$199. Ring (09) 444 9549 ask for Mike. Also wanted Emplant and 24 bit display card - reasonable prices only.

C64 hardware/software/magazines wanted; especially 1581 disk drive, CMD 3.5 inch high density drive or RAMlink drive, C128 RAM expansion, Action Replay, Expert, or Final Cartridges, and ZZap 64 magazines. Amiga A64 emulator plus 1541 disk drive interface wanted. Amiga VID1 12 colour digitiser plus Megamix Master Sound Digitiser built-in for sale \$160. Printers (2) Star 9 pin colour dot matrix \$155 ono; also Commodore MPS 1200 mono dot matrix \$90 ono. Amiga 500/1200 contacts wanted to swap PD and demos. Phone Carlo (09) 335 5531 or mail to 4 McCleery Street, Beacons-

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CD32 games - Super Stardust \$40, Lital Divil \$40, Trivial Pursuit \$35, Trolls \$15, Liberation \$15, Zool \$15, Pinball Fantasies \$15, All Dogs Go to Heaven \$15, 6 assorted cover disks and magazines, \$35 the lot. All games as new in boxes. Phone Daniel (042) 85 3320 after 6PM.

CD32 Joypad Controller, Diggers/Oscar games disks, SX/1 2Mb fast RAM, 40Mb hard drive, tower power supply \$650 ono. Communicator+ Lite all disks and manuals \$150. Phone Barry 02 667 1114.

For sale or swap: A2000 HD 9Mb RAM 120Mb SCSI hard drive 1084S monitor, WB2, A2630 flicker fixer. Including Broadcast Titter and AmigaVision. This computer is in new condition as it was hardly used. Price \$1,150, or swap for A1200 with cash adjustment either way. Contact Frank on 018 29 2559 or 02 622 8159.

For sale: 1 x 44Mb internal SCSI Syquest drive + 5 44Mb disks \$510, 1 x 44Mb SCSI Syquest drive + 4 44Mb disks \$550, 1 Primera Dye Sub Printer includes dye sub etc, as new, \$1,500, 1 Neriki dual YC genlock, as new, \$750, 1 OpalVision card \$200. Software and manuals all from professional DTP setup \$550 the lot. ADPro latest version full manuals, PageStream latest version, ProPage full manuals, Plus accounting software, AmiBack + Tools, full Deluxe suite, Video, Print, Paint, AmigaVision, Hypertext plus games, plus heaps more. Call 02 879 4474 all hours.

For sale: 1084S monitor, double 3.5 drive, brand new mouse, joystick. Original software includes PenPal, Vista, Workbench, Fonts, Extras etc (v3.1). Heaps of other software including Megadisc 1-42. Phone (02)

569 2910 Don Phillips 4/23 Croydon Street, Petersham 2049.

For sale: 44Mb SyQuest removable hard drive - internal with 2 cartridges \$290. Seagate ST3144A 120Mb IDE drive \$90. Excellence V2.0 genuine with manual \$50. Phone Steve on (042) 971 682.

For Sale: A4000/040, 18Mb RAM, 130 & 730 Hd, HD Floppy, Sony CD-ROM, GVP 4000 SCSI, 1960 monitor, GVP IV24, DSS+8, Roctec mouse, MD100 MPEG card, Fujitsu colour printer. Software includes Scala 400 including Echo and libraries, Final Writer, ADPro 2.5, Morph Plus, VistaPro, Scenery Anim, Opus, Distant Suns, AmiBack, Brilliance. All current programs. Total cost over \$13,000 Sell \$8,500 ono. True multimedia platform in as new condition. Phone Dave on (065) 411 722.

For sale: A500 accelerator, Microbotics VXL-30 inc 25 MHz '030 CPU, 68881 maths coprocessor \$240. ROM switcher, choose WB 1.3 or 2.1 by warm boot from keyboard \$55. Phone 019 629 265.

For sale: A500, WB 1.3, 512K chip/512K fast RAM, 2 joysticks, 2 mice, TV modulator, disk holder, loads of good quality software and games, like new, \$300. Star NX-1000 colour dot matrix printer with 500 sheets of paper and ink cartridge, \$200. If interested ring Ross on (077) 834 660 between 4PM and 6PM

For Sale: Amiga 1081 monitor as new \$150, Japanese standalone genlock as new \$150. Phone Michael (066) 761 695.

For sale: Amiga 4000/CD32. Amiga 4000 with 0.28 dot pitch multisync monitor, 6Mb RAM, 124Mb HD and 9 pin Star colour printer with three colour ribbons and 1 black ribbon. Software including Monkey Island 2, Indiana Jones and the Fate of At-

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For Sale: Amiga 500, 1Mb RAM, modulator, extra drive, mouse, pads, joystick, plenty of games \$330. Plus C128 - \$150 Call Jason on (047) 826 289

For Sale: Amstrad laptop 640k RAM, manuals, LCD screen \$150. Phone Jay (076) 252 175.

For Sale: CD32 top condition with Alien Breed II/Tower Assault, Roadkill, seven magazine cover CDs and two control pads. Only \$320. Phone (062) 824 934 and ask for Dave.

For sale: Commodore 64 Games - Elite C64 cassette \$10, Bards Tale C64 disk \$10, Adventure Construction Set C64 disk - \$5. Amiga Games - AD&D gold Adventure Pack (5 games) \$20, Eye of the Beholder 1 \$30, Eye of the Beholder 2 \$30, EOB1 and 2 Hint Books \$10 each, Jaguar XJ220 \$20, Rugby World Cup \$20, Champions Pack (3 sports games) \$15, Over 300 adventure game solutions and maps compiled by myself onto 3 amiga disks \$20 per set. Action Replay MKIII for Amiga 500 \$50. PC Productivity - Crossword Creator for PC Computers 3.5 inch floppies (latest version and unopened) \$80. All items are originals and are in their original boxes. Phone Graeme on (043) 511 746.

For sale: for the C64 games CD and interface, programmers reference guide, advanced 6502 programming, advanced BASIC and machine code, graphics and sound, the new hackers handbook, CF and 2 app mags, approx 30 disks of games, offers phone Paul (065) 513 551.

For Sale: GVP I/O Extender high speed serial and parallel expansion for A2000 and A3000 \$150. Netcomm MIIF Smart modem, new condition. Phone (02) 580 2746.

For sale: GVP Impact Series II hard disk drive, Suitable for A500, includes 50Mb HD and 4Mb memory. Price \$250 ono. Ring Phil on 631 9843.

For Sale: Imagine 3 with manual, \$190. Personal Paint Ver 2.1 - \$30. Deluxe Paint IV AGA - \$20. Two AGA games Oscar and Diggers together - \$20. Flight Simulators F117A and Tornado, \$25 each or both for \$40. All originals. Can mail to you COD if necessary. Phone Jason on (03) 870 2213 or else (03) 663 3086 for more details.

For sale: The Deluxe Paint IV Video Guide Vol 1 \$40, Advanced Techniques with Deluxe Paint IV Video Guide Vol 2 \$40. The video guides take you on a guided tour through DPaint, a variety of quick tips. Phone (07) 3209 9730

For sale: Video equipment. Neriki Imagemaster Genlock, DigiView III and DigiView Gold, RGB Video Colour splitter, Video Titling software. \$900 neg. will separate. Phone (06) 258 8787.

For sale: XT bridgeboard with 5.25 inch floppy drive, hard drive with Amiga and IBM partitions, hard drive controller, MS-DOS, GW-BASIC and parallel/serial card. All this for \$150. Games for sale - BMX Simulator, Thunder Strike, International 3D Tennis, Continental Circus, F/A 18 Inceptor, Hellfire Attack \$15 each. Epic and

Instant Music for \$20. For Sale - brand new modem, only 1 month old, 2400 Bps for use with bridge board or IBM \$99 ono. For Sale: GVP SCSI controller, only 2 months old - \$150. Phone 076 252 175 after 4PM and ask for Jay.

Games for sale: Zak McKracken (A500) - \$15, Psycho Killer (CDTV / CD32 / IBM) - \$15, North Polar Expedition (CDTV / CD32) - \$30, Lost Treasures of Infocom (A500) - \$35, Power Games (CD32) - \$25, Pandora's CD (CDTV / CD32) - \$10, Psygnosis Demo (CDTV/CD32) - \$10. Phone (049) 992 437 or write to 14 Sonoma Road, Budge-woi NSW 2262.

Vidi-amiga 12 AGA digitiser, hardware, software and manual \$100. Adorage AGA digital video effects all software and manual, as new in box \$80. Roctec genlock \$100. Three way data transfer switch, plug in your printer and digitisers and switch from one to the other \$50. Phone Nick on 015 896 732

Wanted - Hard drive to suite Amiga 500. Not too big/expensive. Must be in good condition. Phone/fax Jay on (064) 938 432 ah.

Wanted C64 with disk drive. I can't afford to buy a computer, but if you have an unwanted C64 with disk drive, please don't throw it away, I'll use it. My address is PO Box E84, Queen Victoria Terrace ACT 2600.

Wanted LPD Writer ph (06) 296 2585 3PM - 8PM

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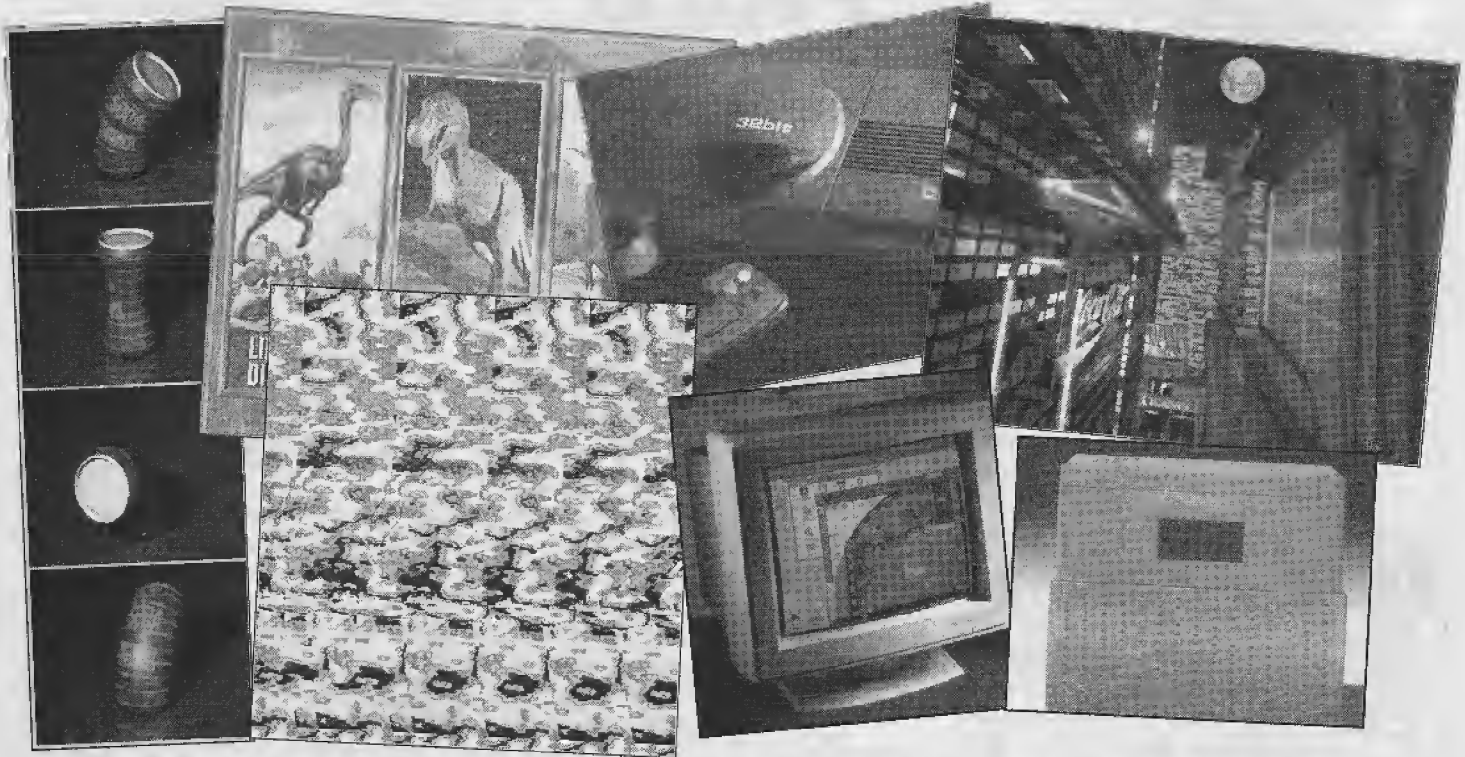
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Looking suspiciously as if it's based on the same engine as Dawn Patrol (reviewed in the July Amiga Review), Overlord is a World War II combat flight simulator of the air campaign leading up to the D-Day invasion of Normandy.

Like Dawn Patrol, it's not purely a story-driven game that forces you to take one mission at a time; you can set up missions as you like, although you can only fly for the Allies in a Spitfire IX, Typhoon IB or Mustang III.

If you do choose to follow the Overlord mission sequence, you play three successive pilots, moving on to the next one every time you die and ending the game if you use them all up. This isn't too likely, though, because among its many features Overlord gives you the ability to cockpit-hop; if your plane's been shot up, you can jump to another plane, and still mystically "be" the same guy. You can do this in less extreme circumstances as well, to keep a multi-plane mission on track without having to use a cumbersome system of ordering other pilots around.

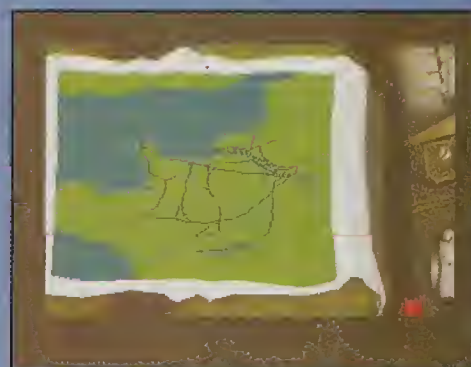
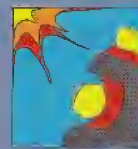
The Big New Feature of Overlord is the Inside Combat Lock system. Hit Backspace and your viewpoint shifts up a bit (getting those irritating instruments out of

the way) and points, by default, at the nearest flight target, tracking it no matter how you steer the plane. See-through arrows on the sides and top of the cockpit stop you getting confused - or try, anyway.

Unfortunately, the Inside Combat Lock system and all the other views and features of Overlord suffer from its uninspired conversion from IBM to Amiga. As with Dawn Patrol, the convertors have chosen to make the game compatible with ECS Amigas, and since they don't appear to be God-Like Programmers this has meant the usual small screen view and very basic vector graphics.

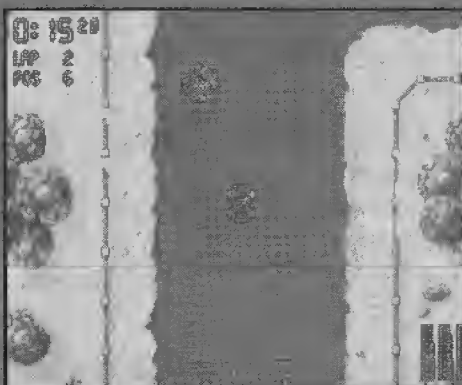
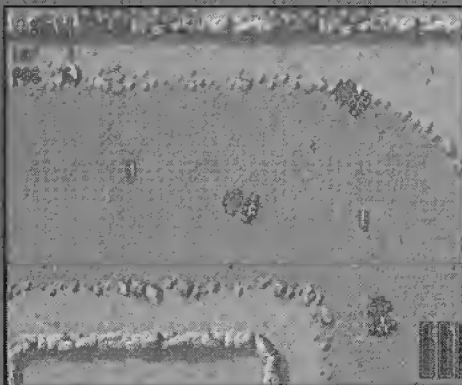
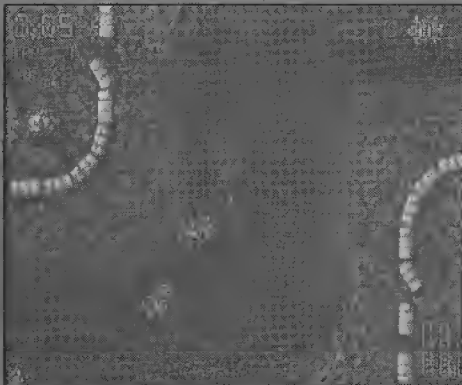
The back of the box claims "the most realistic graphical portrayal of aircraft and gameworld in any historical flight simulation to date"; this may actually be the case in the PC version, but as far as graphics go the Amiga version could have been created any time in the last seven years.

That aside, this is a good game. Excellent manual with the usual pile of barely relevant but interesting information, decent flight model (no silly bits like planes in 90 degree banks not losing altitude), plenty of views and missions, hard disk installable - just not pretty. □



Overlord

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▶ Another top-down racing game, not unlike All Terrain Racing (reviewed in the May Amiga Review), but with bigger numbers. There are five types of car and five kinds of racetrack, against the three of each in ATR - but you can't choose what kind of car to race on what track.

Essentially, this is much the same game. Burn around the 20 tracks against five computer opponents, the clock or a friend (via a null modem cable), collect speed-boost and cash tokens on the road and bonuses for coming in the first four places, upgrade your car (acceleration, turbo boost, steering and tyres) and burn around some more. If you're good enough, you'll make it to the final two one-on-one races and finish the game - and you'll have to be VERY good.

Unlike ATR, you can beat your car to death on the scenery - and the more fragile cars, like the Indy racer and sports car, are quite easy to break. Fortunately, there are repair tokens lying around on the road along with the others, and your car gets completely repaired in between races.

And Turbo Trax has no mines or missiles with which to blast the snot out of your friend in datalink mode. Details, details. As I said, it's basically the same game.

This genre of game's been done over and over, and this is a perfectly good version. It's closer to realism than ATR in both graphics and gameplay, but both are a very long way from being a simulator and, if pressed, I think I'd give ATR the nod for quality of gameplay.

Turbo Trax's computer opponents are well graded, the manual's fine, the graphics are good and the scrolling nice and smooth. The different cars and tracks behave as you'd expect, and finishing is certainly a challenge. But if you've already got ATR, there's no very good reason to get Turbo Trax as well.

Contact Amadeus on (02) 651 1711. RRP \$69.95.





► This is a flight simulator for trainspotters. I'm sorry, but there's no other quick way to describe it. It simulates, in excruciating detail, the landing of an Airbus Industrie A320 jetliner at various and assorted European airports - and that is absolutely ALL it does. Landing is the most challenging part of flying a jumbo, so I can see why the kinds of people that climb the north faces of mountains because they're harder would be interested in simulating it, but the concept doesn't do much for me.

Nonetheless, I could be quite complimentary about this program. I don't like it personally, because I'd rather grab the stick and boot off into the wild blue yonder than deal with the most technically difficult but least exhilarating part of a flight, but I can accept that there are flightsim freaks out there who really go for this sort of thing, and as far as I'm concerned they can have it and good luck to them.

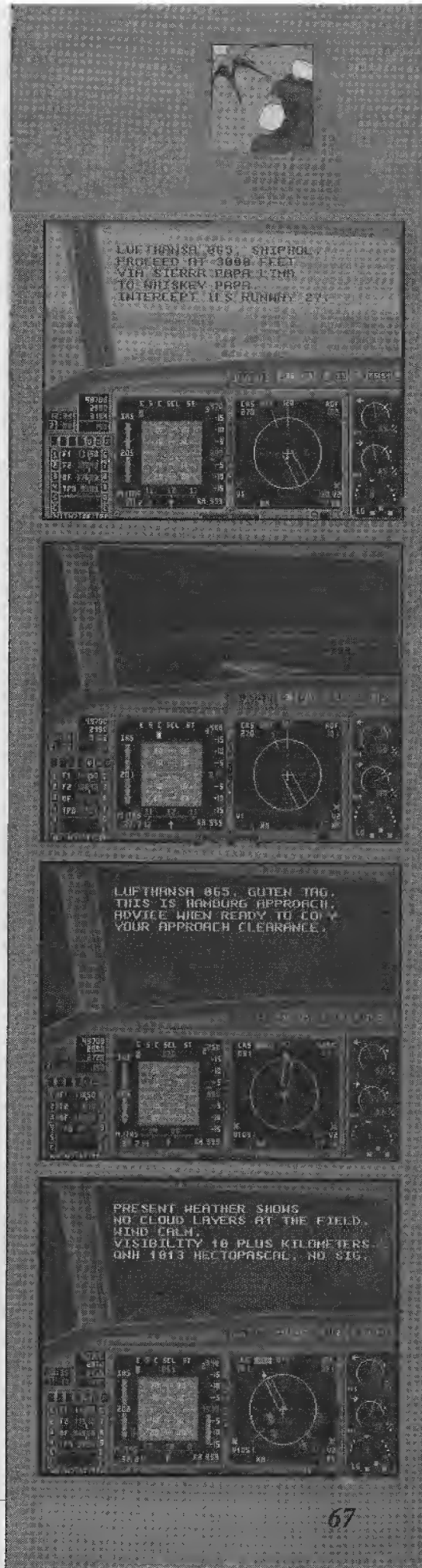
Unfortunately, even for these people, I suspect this would turn out to be a rather dud program. The 100 page manual and accompanying booklet of approach charts for airports are, of necessity, very complex, but I can't help but think that traditional flightsim accoutrements such as a key reference

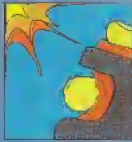
chart might have helped. And the remarkable complexity of the controls has been clumsily handled - instead of sensibly assigning everything to key shortcuts, for many settings you have to move the mouse semi-randomly to highlight the correct instrument panel, then click and enter a value. You can use an analog joystick with an appropriate adaptor, though.

And the program itself's sadly dated. The font for the intro screen's the good old ugly Workbench 1.x Topaz 8, and the graphics wouldn't look unusually good to Flight Simulator 1 players. Add to this the fact that the program crashes now and then - my favourite problem is the one that leaves your A320 apparently stuck in a tree, hanging in the air with no danger of death from anything other than hunger - and you end up with a pretty darn dud game.

But hey, maybe I've missed something. As I said, these sorts of games don't excite me at all, and maybe A320 is a perfect example of the genre and my blinkered vision has prevented me from appreciating it. And, then again, maybe not.

Contact: Hotpoint Ph: (02) 634 6499. RRP\$69.95





Virtual Karting - Preview

It is written that Amigas do great platform games, decent vector graphic games, and lousy texture mapped games - vector graphic games with images "mapped" onto the planes that make up the objects, for more realistic looks.

If you doubt this assessment, just look at all the attempts to produce workable DOOM engines on the Amiga; the couple that have actually made it to commercial release are chunkier and slower on a 40MHz 68040 Amiga than DOOM on a bargain basement 66MHz 80486. It would appear, from this evidence, that fast texture mapped gaming on an Amiga is pretty much a non-starter, because it needs the sort of howling straight-line processor grunt that only a stacked DOS box can supply.

Bucking the trend, though, is Virtual Karting, a new vector graphic race game that aims to be "the fastest, smoothest and most detailed texture mapped game the Amiga has ever seen".

Since the Amiga hasn't actually seen very many texture mapped games - vector graphic, yes, texture mapped, no - this would not appear to be too tricky a feat. But Virtual Karting isn't happy to be

the best of its kind - it actually wants to be good, too. The makers claim 25 frames per second in full 3D on a plain Jane A1200, or 50 frames per second in the zoom-and-rotate 2D top-down view, and full 50 frame per second animation on accelerated AGA machines - and it seems that "accelerated" has a pretty broad definition, as a 1200 with fast RAM will do! These are very impressive numbers, and the feat has apparently been achieved by doing the texture mapping in a completely new way, without trying to beat the IBM clones at their own game.

There are two types of karts - 100 and 125cc - and only three tracks in the unfinished preview version. There are four view heights in the 3D game, like good old Virtua Racing and its offspring in the arcades, and a spiffy helicopter flyby at the beginning. And on top of the pretty views and blistering speed, this game promises truly realistic driving - which is a must if you want a decent simulation of the differential-free, four-wheel-drift world of go-kart racing.

Look for a full review of this hot new title soon - in the meantime, enjoy these pre-release pictures!

□



► If you've long had a sneaking suspicion that golf simulations take themselves somewhat too seriously, but don't want to play some totally silly mini-golf game, this is the product for you.

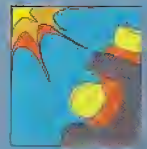
From Sensible Software, makers of Sensible Soccer and the Cannon Fodder games, Sensible Golf takes all the basic elements of a golf sim, doesn't bother with the super-accurate frills and leaves a very playable, good fun game. They've gone with the presentation they know - forget the two-inch-player, view from behind presentation of every other golf game; in Sensible Golf you're a weeny little ten-pixel splodge viewed from far above. Looking at the scenery, you can't help but think that Sensible Golf is what happens when the poor little guys from Cannon Fodder put on some tartan pants and take a day off. I'm quite sure that more than a few graphic elements have been lifted from Cannon Fodder, which is no bad thing but certainly produces a moment of initial disconcertion.

Once you're past that, this game's a doddle to play. It's joystick controlled; aim with left and right, pick club with up and down, hold the button to see a map, tap it to activate the Welly-O-Meter (I

am not making this up), which is much the same as every other golf game's swing meter except for the fact that singularly bad timing on the second click will see you miss the ball entirely, and attract applause. Get on the green and you shift to a slightly more magnified putting screen, still viewed from above but with arrows on the green to show you the slope.

While the interface may be simple, there are all the game variants any non-freak needs. You can have up to 72 (!) players in any one round, and they can be any mixture of humans and computer-controlled opponents at various levels. You can make your player look how you like, with different skin, hair, shirt and trouser colours. You can play Matchplay, Strokeplay, tournament or Skins games on any of 25 courses, none of which try to look like real world courses and many of which are singularly devious in design.

It's two disks, it'll run on any 1Mb Amiga, the manual's to the point and witty; generally speaking, Sensible Golf's a bunch of fun. If you're a golf sim fanatic you won't like it; if you've got better taste in clothes than that you probably will. □



Sensible Golf

Available from Amiga software dealers.
 Contact Amadeus Computers on (02) 651 1711 for more information.
 RRP \$69.00.



AlfaColour 256k

Colour Scanner



By Jai Cowan

► If you need to turn pictures or text on paper into computer data, there are three ways to go about it. You can pick up a cheap video camera, and plug that into a frame grabber such as the Vidi 12. Or there's the option of a flatbed scanner (See review of Migraph 1200 in July '94 ACAR). Or you



Below: An example of a 400 dpi scan in text mode.

could try one of the many available hand scanners. We checked out the 400dpi AlfaColour 256K from Natdise at around \$699.

It's an attractive modern looking unit with brightness control, three switches at the side which control various options, and a button at the top to start and stop scanning.

It comes with an interface which could easily be mistaken for an external floppy drive, a brief ten page manual, the usual stack of miscellaneous paper, and the scanner itself. The interface plugs into the parallel port of any Amiga,



and draws power from the floppy drive port. All you need is a minimum of one meg of RAM and a floppy drive so it's happy on most systems.

Another good feature is pass throughs for both your printer and floppy drive connectors. This saves you swapping the leads around every time you want to print or scan or use your floppy drive.

There is a little button on the front of the interface box which switches between printer and scanner. Two little lights indicate which mode you're in.

Software

The included software is pretty basic, just one disk which contains a single program that handles everything you can do. The main program has five buttons up the top of the screen which control

User's Instructions

256K-Color Hand Scanner for Amiga



scanning, settings, loading, saving and one more incredible function - quitting. It's all Workbench 2.x or higher compliant and multitasks beautifully.

The scanner has a four inch pick up at the front which allows you to scan an A4 page with just two sweeps. However, you then have to piece them together, which could be very fiddly. However most scans won't be this big, so for the sake of this review, I concentrated on scanning standard photograph sized images to give you some idea of what's possible.

Operation

After you've installed the hardware, you're ready to fire up the software which is just copied to your hard disk, there's no installer included. Next, you make sure all the settings on the software match that of your scanner, and away you go. It's pretty straight forward, just select the scan button and then it'll run the warm up timer. The scanner takes two minutes to warm up from a cold start.

Once it's in use, the scanner will stay hot enough to use unless it is left for five minutes of non-use.

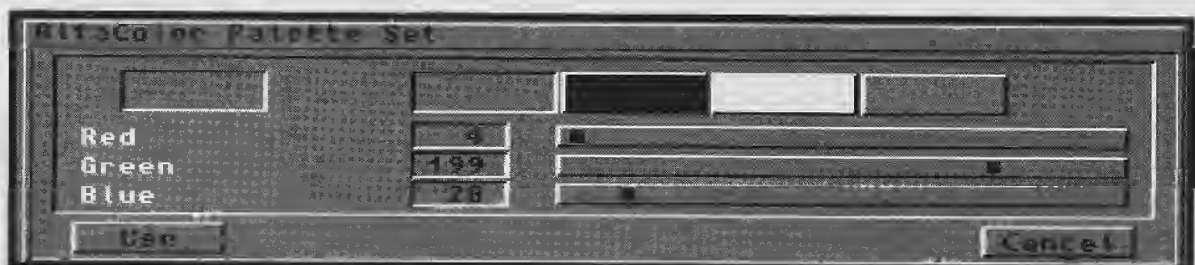
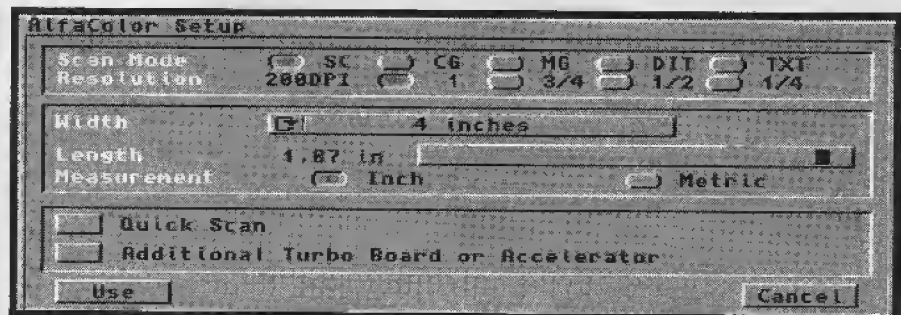
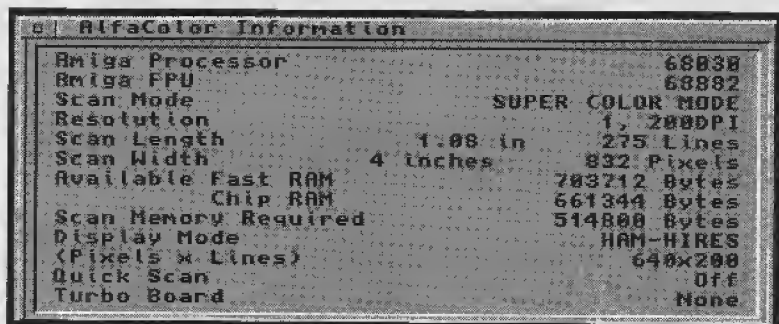
To scan, you press the button on the scanner and slowly roll the scanner across the page. One of the coolest things I found was the fact that you get a real time picture of what you've scanned on your monitor, as well as a

ticking sound from the interface every millimetre, to help you maintain a constant speed. If you move the scanner too fast over the page, the over-speed buzzer will sound so you don't lose data. It's quite a good system.

Problems

Unlike a flatbed scanner, where the pickup is mechanically moved along the page at a constant rate, you often get a dodgy scan which has to be re-done. A steady hand is important for using this scanner as I found myself doing some scans four times to finally obtain a smooth result. This is especially a

Below: The Alfa colour's simple yet adequate software.





Left: Two full colour scans at 400 dpi.

Below: You can view your scan using a variety of modes.



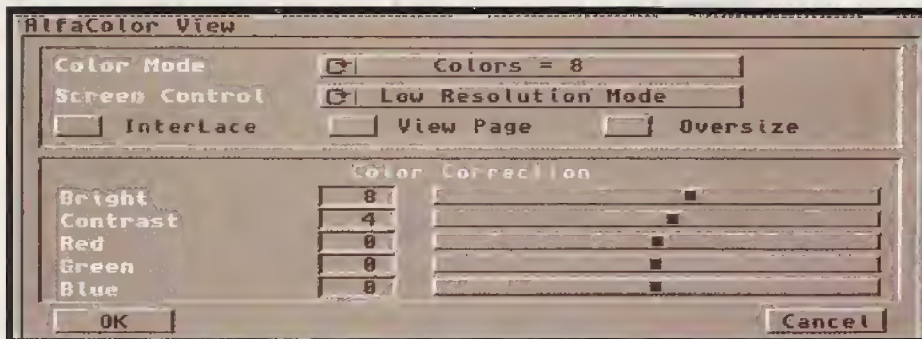
problem when you're scanning at a high resolution and the scanner can't seem to keep up.

The cable from the interface box to the hand scanner could do well to be slightly more flexible. It's really quite frustrating when you're half way through a scan and the cable grabs on the edge of the desk and spoils it.

Despite these small glitches, I do like the Alfa Colour. It's pretty well designed and will scan out of most books and magazines without too much trouble. However, it's easier to operate over a single sheet because the rollers get caught on the edge of most books. It seems Alfa Data had standard sized photographs in mind when they designed the Alfa Colour.

Colours, Colours, Colours

If you have an AGA amiga, you can display HAM8 pictures which are 256,000 colours at 200 dots per inch. ECS Amigas, unless they have a 24 bit graphics board are stuck with 4,096 colours. The pictures shown here are HAM8 scans of photos. You can also do a 256 colour scan if you prefer. The Alfa Colour doesn't stop at pretty pictures. It has a Text mode which can be





Right: Another full colour 24bit scan using the Alfa Colour.



operated at 400 DPI and works quite well for scanning black and white images and text.

A wide variety of grey scale and dithering options are also available as a last resort. The software allows you to save scans of normal IFFs which will load into all paint programs, desktop publishing software and wordprocessors.

Each of the scan modes let you save the entire scan, or you can select which part of the image to save by dragging a box. This saves you cropping the scans in yet another package.

Wrap Up

The best part about this scanner is the price. It will not deliver similar results to a flatbed, and it's more of a bother to use, and takes longer. If you want to scan some nice small, colour pictures the Alfa Colour could be the go. However for serious use you need a flatbed. For light use, or if the kids want a scanner for school projects, it's an okay buy and with a bit of practise, delivers passable results on any machine.

For more information call Natdisc on (02) 544 1874. RRP \$699.



Good enough for professional use?

The scanning and colour resolution of the AlfaColour are certainly good enough for line art. However, for grey scale or true full colour reproduction you need 256 shades of each colour or grey - not just the 64 which AlfaColour offer - giving a total of 256,000 colours. This lack of colour resolution could exhibit banding in some conditions.

However, with judicious use of dithering techniques you could make the colour or grey scale range look good enough for low quality work. See the DTP column in this issue for more information.



Contributions to the Amiga Review Art Gallery are welcome. Please post your contributions to Amiga Review, PO Box 278, Camperdown NSW 2050 OR you can modem them directly to us on (02) 550 2499. We also accept files by internet or CompuServe. Our internet address is pcreview@world.net. Compuserve is 74431, 1224.

RIGHT: ROBOT ARM
by Alan Garfield
Rendered using Lightwave 3.5 - part of an animation.

BELOW: EDEN
by Craig Delahoy
Series rendered using Real3D V2.0. Textures created using OpalPaint and Deluxe Paint. An intricately detailed model, the still images presented here are chosen from a short, unproduced animation.



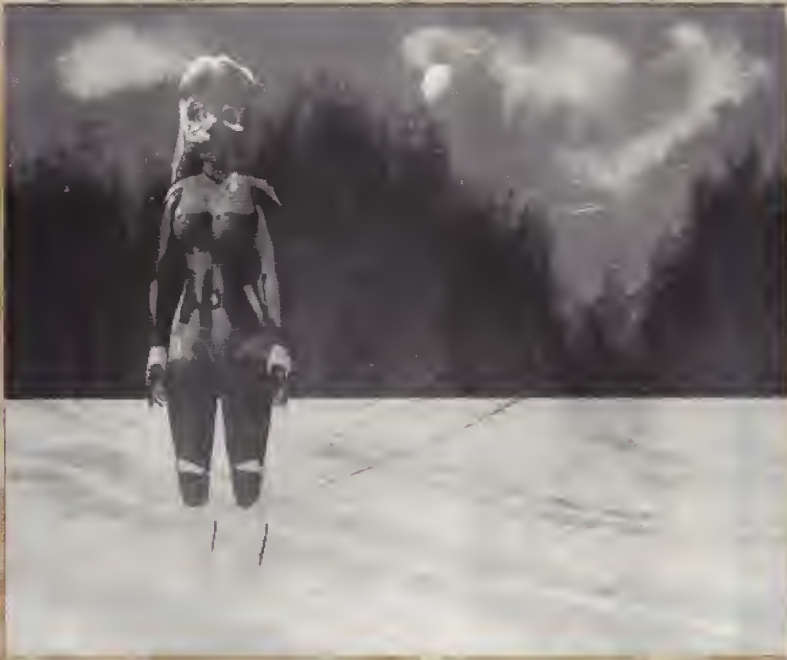




**GALLERY of HAND
DRAW IMAGES**

These images were downloaded from the AMINET image areas on the Internet, or CD-ROM. Starting next month, the best hand drawn image published each issue will receive a cash reward of \$50.



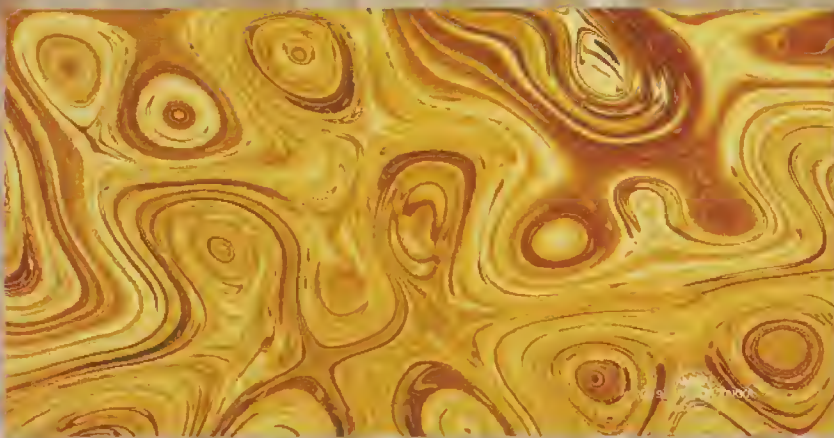


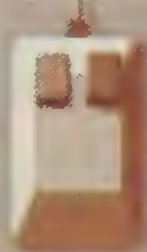
GLASSY GIRL
By Mike Yrj

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Amiga Graphic Artists Special Interest Group



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Who are they?

Amiga Graphic Artists Special Interest Group is a dedicated group of individuals from various backgrounds, professional and non-professional, all with one thing in common - They all own AMIGA computers and they are all interested in what the AMIGA does best - Graphics. They meet one Sunday each month in Kirrawee, just south of the city of Sydney in New South Wales, Australia. They use mainly "power" AMIGAs due to the CPU intensive nature of the graphics area. These include the AMIGA 1200, the AMIGA 2000, the AMIGA 3000 and the AMIGA 4000.

A variety of processors are used. They work with proprietary and non-proprietary animation formats from the AMIGA platform (ILBM Anim5,7,8,16 and 32 (Scala format)), FLI and FLC, AVI and MPEG for PC. Some of their members are even closet PC and Macintosh owners! Still image formats include AmigaIFF (1 to 32 bit), GIF 87a and 89a, JPEG, PICT, PCX, TARGA, PPM/PGM, SUN RASTER, X11, BMP, PNG and a few others.

What Do They Do?

At each meeting you can expect demonstrations and tutorials using state-of-the-art amiga rendering, paint and image manipulation software. Their members use many of the currently available Amiga, PC and Macintosh software. These include:

3D Software • Lightwave 3D for Amiga and PC (versions 3.1,3.5,4.0beta and PCv4.0) • Imagine 3.0 for Amiga and PC • Real3D V2.49 for Amiga and PC • 3D Studio Release 4.0 PC

• PixelPro 3D

Paint Software • Deluxe Paint 4.5 and 5.0 • Brilliance • DCTV Paint • Personal Paint • SpectraPaint (24bit) • PicoPaint (24bit) • TV Paint (32bit) • OpalPaint (32bit)

Processors • Art Department Professional (ADPro by Elastic Reality) • ImageFX1.5 and 2.0 • PhotoGenics 1.2 • ImageMaster R/T • ScalaMM200 300 and 400 • ProControl for ADPro • Animation Station • Forge and Essence II/III for Imagine • Main Actor 1.55 • MorphPlus (Elastic Reality) • CineMorph • PhotoShop3.0 (PC & Mac) • Fractal Design Painter (PC)

Landscape Generators/Simulators • VistaPro 3.0 • Scenery Animator

Their members are involved in everything from running their own graphic orientated businesses, to computer repairs, to game sprite design. They have one member with a beta Opal Roaster board (the PAL answer to the Newtek Toaster) and several members with Motion VLAB and PAR motion JPEG boards.

We'd like to hear from you! You're welcome to attend any upcoming meeting if you use any of the software mentioned above.

NEXT MEETINGS

Here's a club that could be just for you! The next meetings are:

Sunday 5th November

Sunday 3rd December

Sunday 31st December

They start at 1 P.M. sharp! As a rough guide for future reference, meetings occur

approximately every four weeks - So, if the date above has passed, please calculate four weeks from these dates.

If you are unsure please call Michael Williamson on (02) 9545 4572. Michael will also inform you about membership costs if you decide you'd like to stay as a member, as well as any other questions you may have.

Michael is the President and Treasurer of the group and is assisted by Ivan Smith. You can also call Ivan for information on (02) 9545 1995 - after 7pm (Local Sydney time).

How to get there

The easiest and quickest way to get to the meeting is by public transport. Catch any Cronulla bound train and get off at Kirrawee Station. Walk out of the station, straight ahead and up the road one or two blocks and you're there.



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Authors wanted

If you can write in plain English, have experience with a particular product and can meet deadlines, we'd like to hear from you.

Amiga Review is looking for articles providing practical help using commonly run applications.

Any wordprocessor format is acceptable, although straight ASCII is preferred. IFF images should include captions in a separate text file (or on the end of the main text file).

You can modem contributions to us by calling (02) 550 2499.

If you don't get any response on connection, just upload your article using ZModem - be sure to give the story and related files a meaningful file name.

Disks should be mailed to The Editor, Amiga Review, PO Box 278, Camperdown 2050.

Please don't send your original disk, as we cannot guarantee safe return.

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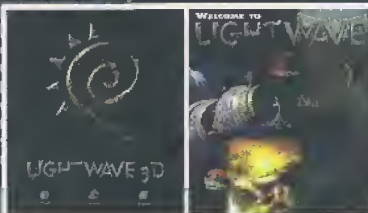


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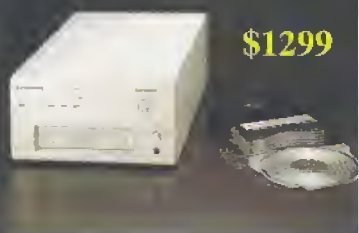
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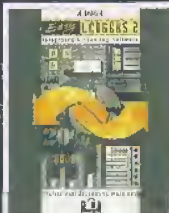
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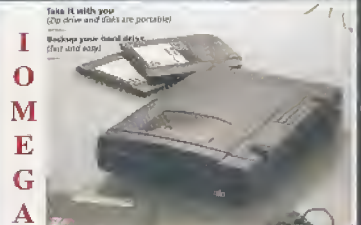
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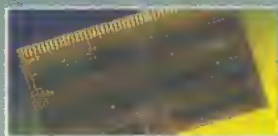
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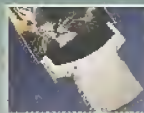


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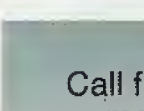
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